An Introduction to State Trading in Agriculture. Karen Z. Ackerman and Praveen M. Dixit. Market and Trade Economics Division, Economic Research Service, U.S. Department of Agriculture. Agricultural Economic Report No. 783.

Abstract

State trading enterprises are far more prevalent in agriculture than in other industries. STEs account for significant shares of world trade in grains, dairy products, and sugar. Attempts to measure the impacts of STEs and their activities on international agricultural trade have just begun. This report presents a classification scheme for STEs that provides a qualitative index of an STE's ability to control domestic markets and its ability to influence external trade. We applied the classification scheme to nine major agricultural STEs and concluded that only a few of them are able to affect international trade substantially. Recent policy reforms have eroded some of the nine's powers to influence trade.

Acknowledgments

The authors thank several important contributors and reviewers. Tim Josling deserves our appreciation for his contribution to the analytical framework underlying this study. Nicole Ballenger, Mary Bohman, Joy Harwood, Jim Stout, Ron Trostle, John Wainio, Tom Worth, Ed Young, and Steve Zahniser of ERS commented constructively on several earlier drafts of this study, as did Will Martin of the World Bank and Tom Grennes of North Carolina State University. The authors appreciate their interaction with university economists who participated in an ERS workshop on state trading in November 1996, in a December 1996 meeting of the International Agricultural Trade Research Consortium, and in a workshop at Stanford University cosponsored by the North America Forum and the California Agricultural Issues Forum in November 1998. We also thank our colleagues at USDA's Foreign Agricultural Service, the Office of the Chief Economist, and the Office of the U.S. Trade Representative for their helpful comments on this paper. Lastly, the able edits of Brenda Powell and Tom McDonald significantly improved this report.

Washington, DC 20036-5831 October 1999

Contents

Summary

State trading is more prevalent in agriculture than in other industries because many countries use state trading enterprises (STEs) as a means to achieve policy objectives such as domestic price support, efficiencies in agricultural marketing, and affordable food supplies for low-income populations. STEs account for significant shares of world trade in grains, dairy products, and sugar.

In 1995 and 1996, more than 30 countries notified the World Trade Organization (WTO) of almost 100 agricultural enterprises or other agricultural organizations that could be defined as STEs. Some of the largest export STEs reported to the WTO are in Australia, Canada, Indonesia, Japan, South Korea, and New Zealand. Countries seeking accession to the WTO (like China) also control their agricultural trade through STEs.

STEs are government or private enterprises that have been granted special or exclusive privileges by their governments, such as exclusive trade authorities and government underwriting of operational costs. The special domestic market, trade, and financial authorities allow STEs to influence, through their purchases or sales, the level or direction of trade in their commodities.

STE activities affect trade by influencing domestic and international prices. An STE that restricts imports into a country will have an effect on the domestic price just like that of an import tariff. Similarly, an STE that expands exports will have an effect on domestic price that resembles an export subsidy. Several factors influence the tariff/subsidy equivalents associated with an STE, including its degree of control over the domestic market, its policy objectives, the extent of its international market power, and its range of authorities and government support.

Attempts to capture the quantitative impacts of STEs and their activities on international agricultural trade have just begun. Such information, when available, will show what types of activities are most trade-distorting and would require disciplining. An alternative means of understanding and analyzing qualitatively the market effects of an STE is to develop a classification scheme for STEs. This report presents a classification scheme for STEs based on their ability to control domestic markets and their ability to influence external trade.

Four general types of STEs are established under our classification scheme. Type I STEs control neither the domestic market nor trade and have little, if any, capacity to affect the market. Type II STEs control domestic markets only and their potential to distort trade is low. Type III STEs allow competition in the domestic market but not in external trade, giving them the potential to moderately distort trade. The actual extent of their trade distortion depends on the extent of their international market power, the range of their exclusive privileges, and the importance (share) of external trade in domestic consumption and production. Type IV STEs have exclusive or special authorities over both trade and the domestic market, which give them a greater capacity to distort trade than the other three groups. However, a Type IV STE which has a small share of the global market may distort trade less than a Type III STE which is a big player in world trade.

For illustrative purposes, we applied the classification scheme to four major export-oriented STEs, four major import-oriented STEs, and China's state control of grains. All the STEs used as illustrations for this paper were classed as Types III or IV, although recent policy changes eliminated exclusive trade authorities for three of the import-oriented STEs, effectively changing their classifications to Type I. As countries unilaterally dismantle their STEs' trade-distorting authorities, more STEs will move into the Type I and II classes, which have little, if any, capacity to distort external trade.

State trading as an issue will continue to garner attention. These enterprises form the cornerstone of the agricultural systems of many countries, and abolishing them—either through further trade reform in the WTO or under the structural reform programs of international institutions like the International Monetary Fund or the World Bank—is not likely to occur soon. Consequently, discussions on STEs are likely to revolve around strengthening WTO rules governing these enterprises and imposing additional disciplines on their exclusive authorities and the policies they implement.

If the objective is to minimize global trade distortions arising from the activities of STEs, what goals might policymakers pursue for STEs? Clearly, Type I STEs have little, if any, capacity to distort external trade and hence might not require scrutiny vis-a-vis current rule violation. Type II STEs also operate without the support of trade controls. Hence, scrutiny vis-a-vis current rules violations, especially as they relate to international trade, is not necessary, although an examination of domestic competition policy might be desirable.

Type III STEs can moderately distort trade but are not as distortionary as Type IV STEs. The policy goals for Type III STEs might be to examine the extent of market control they exercise and how their institutional characteristics might contribute to additional trade distortion. Type IV STEs, which maintain control over both the domestic and external markets, can distort trade the most because of their exclusive marketing authorities in both markets. The policy goal here might be to address entry restrictions into the markets. Institutional characteristics, while important for Type IV STEs, do not necessarily constitute the overriding impediment to a move toward free trade.

STEs extend well beyond agriculture, and the issue is likely to get added attention when other sectors, such as services, come to the forefront of negotiations. If this were to occur, chances are that STEs will also be discussed under rules on competition policy for private firms. Clearly, the scope for future work on STEs is vast; the challenge before us is to use simple tools to enhance our understanding of state trading and elucidate alternative schemes to curtail the trade-distorting capacity of such enterprises.

An Introduction to State Trading in Agriculture

Karen Z. Ackerman
Praveen M. Dixit

Introduction

State trading enterprises (STEs) have been an important part of world agricultural trade for decades. The General Agreement on Tariffs and Trade (GATT), which governs global trade in goods and services, first recognized state trading enterprises as legitimate participants in international trade in 1947 when state trading was widespread in agriculture. State trading has been more prevalent in agriculture than in other industries because many countries use it as a means to achieve agricultural policy objectives such as domestic price support, efficiencies in agricultural marketing, and availability of affordable food supplies for low-income populations (WTO, 1995a).

In the mid-1990's, policymakers focused again on agricultural state trading enterprises after the Uruguay Round Agreement on Agriculture (URAA) eliminated many of the exceptions from GATT rules for agricultural trade. Prior to implementation of the URAA, countries could restrict imports and exports of agricultural products to support domestic policy objectives. Now that stricter GATT rules apply to agriculture, interest in STEs has been growing. There are concerns that some countries might use STEs to circumvent rules forged in the URAA. And China's impending accession to the World Trade Organization (WTO) has heightened discussion on this topic.

This paper will discuss some of the difficulties involved in applying current definitions of state trading to agricultural institutions. The paper also will lay out the importance of state trading to agricultural trade especially in the context of a rapidly changing policy environment. Countries' objectives for choosing a state trading enterprise rather than another policy regime will be weighed. An economic framework will explain how state traders might distort trade, and a classification scheme is developed to assist trade policymakers in determining which state traders have the greatest potential to distort trade. The behavioral factors were applied to four export-oriented STEs, four import-oriented STEs, and China's state control of grains to illustrate qualitatively how STEs influence trade.

I. What Is State Trading?

There are several ways to define state trading (Lloyd, 1982). Early definitions focused on state conduct (or operation) of foreign trade (Hazard, 1959), on governments monopolizing foreign trade (Baldwin, 1970), and on government ownership of an enterprise (Ghai, 1973). A functional definition gradually replaced these approaches, with Kostecki (1982) arguing that state trading occurs when a government or a government-backed agency determines the essential conditions (including prices or quantities) on which exports and imports have to take place. Kostecki emphasized government control of trade rather than the creation of specialized institutions, since it is primarily the direct government control that makes state traders behave differently from private entrepreneurs.

Sorenson (1991), picking up on Kostecki's theme, asserted *that the impact that governments exercise over individual transactions is particularly important*. He argued that state trading exists when a government, an agency of the government, or an institution granted exclusive rights by the government controls trade or materially affects the conditions of trade on a transaction-by-transaction basis. Sorenson's definition suggests that the use of tariffs, quotas, and other traditional trade instruments does not constitute state trading, while trade by government-chartered marketing boards with monopolies does. Sorenson classified the European Community's (EC) export tender system and U.S. exports under the Export Enhancement Program (EEP), food aid, and export credit guarantee programs as state trading because, in these cases, "decisions are made on a case-by-case basis [by the government] whether to export more or less, whether to influence the price, or in other ways to affect the terms of sale" (Sorenson, 1991).

Defining STEs in the WTO

The General Agreement on Tariffs and Trade (GATT 1947) defined STEs as government or private enterprises that had been granted special or exclusive privileges by their governments. The Understanding on Article XVII of the General Agreement on Tariffs and Trade 1994 expanded the 1947 definition to help countries decide which of their enterprises to report to the WTO's Council on Trade in Goods. The 1994 Understanding defines STEs as:

> . . . governmental and nongovernmental enterprises, including marketing boards, which have been granted exclusive or special rights or privileges, including statutory or constitutional powers, in the exercise of which they influence through their purchases or sales the level or direction of imports or exports. (World Trade Organization, *The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts*, 1994, pp. 509-511.)

This definition raises three major questions. First, how are STEs structured? Second, what are the "exclusive or special privileges" granted to STEs? Third, must the enterprise make purchases or sales to qualify as an STE?

How are STEs structured? Ownership structure is an important factor in explaining STE behavior, especially their influence on trade. Many of the enterprises reported to the WTO are government agencies or corporations. Some are fully integrated into government administration (departments, ministries, etc.), and the government guides their day-to-day management; others manage themselves autonomously even though the government may subscribe to their capital stock wholly or partially. Many combinations lie in between, including STEs that are subsidiaries of parastatal organizations or institutions where the government may hold minority shares but exerts influence through other means. Consequently, large differences exist in the ownership structure of entities that are notified to the WTO.

What are the "exclusive or special rights or privileges" granted to the STE and their relevance to trade? Government privileges may be statutes or decrees that establish the agency or firm as sole exporter/importer for the country or as chief administrator of import/export licenses. The government may authorize the firm to export government surpluses or import for government inventories. STEs operating in domestic markets may set producer or consumer prices in the home market or act as exclusive marketer or distributor of domestic production or of imported goods. Some "privileges" are financial—government grants, loans, loan guarantees, underwriting of operational costs, or priority for obtaining foreign currencies. Clearly, given the variety of special rights or privileges that are possible, trying to define STEs with respect to all of them is difficult.

Must the enterprise make purchases or sales to qualify as an STE? Can institutions that are not physically involved with sales but contract with exporters or importers or require applicants to demonstrate that exports or imports meet standards set by them be named as STEs? Must the STE own or buy the commodity? Regulatory boards, fiscal monopolies, and other types of agencies use financial or statutory privileges described above to affect the level and direction of exports or imports, but generally do not themselves engage in trade.

Comparing Economic and Legal Definitions of STEs

The economic and legal definitions of STEs acknowledge government control through a government agency or an enterprise that receives an exclusive trade authority from the government. They also recognize an STE's potential to affect traded quantities and prices. The economic definitions are broader in scope than the legal definitions because they focus on the trade and price behavior associated with state trading rather than the institutions that conduct such trade and their relations with government. Throughout this paper, we attempt to distinguish between government regulation of private trade and trade by STEs. We adhere to the WTO definition to define the types of enterprises that can be classed as STEs, but develop a framework for analysis from economic definitions of state trading.

II. How Prevalent Is State Trading in Agricultural Trade?

STEs regulate the marketing and pricing of agricultural products by purchasing or selling domestic production, exporting, or importing. However, governments also regulate agricultural marketing and trade through export subsidies, tariffs, quotas, administered domestic prices, and import restrictions such as quotas and tariff-rate quotas (TRQs). The two types of government intervention are intermingled when STEs administer agricultural policies. For example, when a country designates an STE as sole importer under a TRQ, the STE has full discretion over imports within the quota.

We attempted to determine the prevalence of STEs for heavily regulated commodities—wheat, feed grains, rice, dairy products, and sugar. We also examined STEs' marketing of agricultural commodities in specific countries based on countries' notifications to the WTO Council for Trade in Goods and other information.

State Trading in Wheat

State traders are important players in the world wheat market. STEs account for roughly 40 percent of world wheat exports. From 1993/94 through 1997/98, two large STEs—the Australian and Canadian Wheat Boards—handled 32 percent of global wheat exports (fig. 1). The governments of Poland and other Central European countries (which held a 3-percent share of world exports) authorize their STEs to export subsidized wheat, but private traders also can export wheat. Kazakhstan, which held a 4-percent share of world wheat exports from 1993/94 to 1997/98, used an STE, the State Food Contract Corporation, as its sole export agency, but opened trade to private firms in the 1990's. The State Food Contract Corporation continues to handle government-to-government transactions, about 60 percent of Kazakhstan's wheat exports, while large private grain producers and traders handle the remaining 40 percent of Kazakhstan's exports.

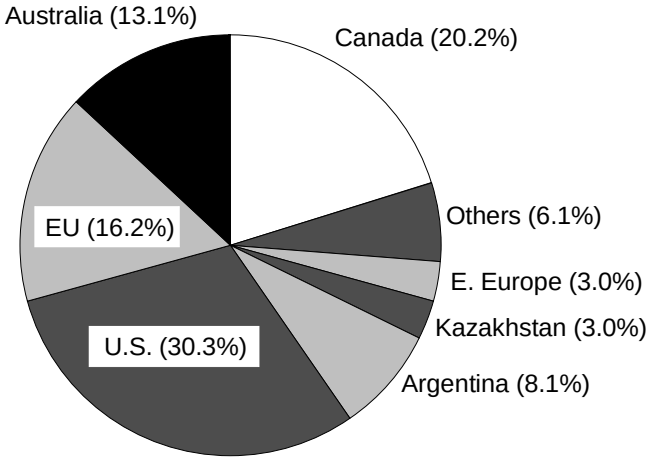
The other two large wheat exporters, the United States and the European Union (EU), accounted for 31 and 17 percent, respectively, of world wheat exports. Neither uses an STE to export wheat, but both countries' governments have regulated their wheat exports. The United States maintains a government corporation, the Commodity Credit Corporation (CCC), which it reported to the WTO Council on Trade in Goods in 1995 and 1996.[1] The CCC operates as the financing agent for U.S. export programs, including the Export Enhancement Program (EEP), which operated for wheat from 1985 through 1995. Under the EEP, the CCC paid generic certificates redeemable for commodities in CCC inventories (until November 1990) and cash bonuses (after November 1990) to private exporters, allowing them to sell wheat to targeted countries at prices below the exporters' costs of acquisition. The CCC did not itself export the wheat. The EU continues to approve export subsidies to private sector exporters through the European Commission's Grains Management Committee, which also issues orders for the export of grains from intervention stocks in EU member countries. The EU did not

[1]The United States reported the CCC as an STE to the WTO Council for Trade in Goods in 1995 and 1996, including lists of the programs which it administers and the commodities procured and exported under its programs. The United States also reports its export subsidies to the WTO Committee on Agriculture in accordance with its commitments to cap and reduce export subsidies under the Uruguay Round Agreement on Agriculture. For more discussion about the CCC, see box, p. 19, "Does the U.S. Commodity Credit Corporation Function as an STE?"

Figure 1

The Australian and Canadian Wheat Boards account for a third of world wheat exports

Average for 1994-97 marketing years



Source: USDA, Economic Research Service.

report the European Commission and its member states' intervention agencies to the WTO as one or more STEs.[2]

STE imports account for between one-third and one-half of 1993/94-1997/98 global wheat imports. Twelve countries account for just over half of world wheat imports, which are far less concentrated than exports (table 1). China and Japan import wheat through monopoly agencies, while STEs in Egypt, Morocco, Pakistan, Turkey, the Eastern European countries, and others co-exist with private traders. Indonesia's Badan Urusan Logistik (BULOG) opened trade in wheat to private traders in 1998, following in the footsteps of Israel, Mexico, the Republic of South Korea, the Philippines, and others who opened their wheat imports to the private sector in the 1980's and 1990's. Algeria's state import agency has been an import monopoly in the past, but recently began to allow private traders to import wheat. Pakistan banned private sector imports in June 1999 after allowing private firms to import since late in 1991.

[2]The EU Commission has the exclusive right to determine the amounts of export subsidies, without which exports of wheat cannot take place; to authorize sales from intervention stocks; and to grant export and import licenses required for trade of some commodities. However, the Grains Management Committee does not directly purchase or sell commodities. Intervention agencies in EU member countries, acting as agents of the Commission, purchase products for intervention and sell them with the authorization of the Commission. Private traders carry out all exports and imports. The EU also agreed to reduce its export subsidies for wheat and other commodities under its URAA export subsidy commitments.

State Trading in Other Grains

The profile of world barley exporters closely resembles that of world wheat exporters, although the United States holds a much smaller share of world barley trade. The Canadian Wheat Board and Australia's state-level STEs handled 38 percent of world barley exports from 1993/94 through 1997/98. Other smaller exporters (the Eastern European countries, Russia, Syria, and Turkey) exercise some degree of state control over their barley exports. The U.S. and EU barley export regimes are similar to those countries' export arrangements for wheat. The EU, the largest barley exporter, held a 30-percent share of world barley exports over the 5-year period, while the United States accounted for only 8 percent of world barley exports.

Table 1—Top 12 wheat importers account for over half of world wheat imports

Importing country	Type of import arrangement[1]	Average imports, 1994/95-1997/98	World market share, 1994/95-1997/98
		1,000 metric tons	Percent
China	monopoly	6,356	6
Egypt	coexists	6,340	6
Japan[2]	monopoly	6,174	6
Brazil	private firms	5,829	6
Algeria	monopoly	4,554	5
Iran	monopoly	4,135	4
Indonesia[3]	monopoly	3,723	4
Rep. of South Korea	private firms	3,972	4
Pakistan	coexists	2,625	3
Russia	coexists	3,180	3
Tunisia	monopoly	2,726	3
Eastern Europe	coexists	2,670	3
Top 12 importers		52,284	52

[1]A state trading enterprise (STE) that is the sole importer for its country is classed as a "monopoly." If the STE is an importer, but private firms also are allowed to import, the import arrangement is termed "coexists." If imports are conducted by private firms only, the import arrangement is "private." The "coexists" category can be applied to many countries where trade has been opened to private trade, but where the STE may import under certain conditions.

[2]Japan allowed private firms to import feed wheat through a Simultaneous Buy-Sell tender system in the Japanese 1999/2000 (April/March) fiscal year.

[3]Indonesia terminated Badan Urusan Logistik's, Indonesia's import STE, monopoly import authorities over several agricultural commodities in September 1998. Change also is underway for Algeria's wheat import STE. Pakistan opened trade to the private sector in 1991, but government pricing policies restricted trade until 1998, when the private sector imported 1 million tons of wheat. However, in June 1999, Pakistan imposed a ban on private sector wheat imports.

Source: USDA, Foreign Agricultural Service, *Grain: World Markets and Trade*, Jan. 1999.

Saudi Arabia's Grain Silos and Flour Milling Organization (GSFMO) handled 27 percent of world barley imports from 1993/94 through 1997/98. STEs in China and Japan held 10 and 9 percent, respectively, of world barley imports over the same period. Saudi Arabia allowed private traders to import barley for the first time in 1998, and Japan will open import tenders for feed barley to private importers for the first time in 1999.

Rice, a staple food commodity for many Asian countries, is heavily regulated by government policies to restrict exports and imports, which STEs often administer. STEs account for about half of world rice exports and nearly a third of rice imports. Private traders export rice from Thailand, the largest rice-exporting country with over one-quarter of world rice exports, but rice exports from Vietnam, the second largest rice-exporting nation (14-percent share of world exports from 1994 through 1998), are handled by state agencies and are restricted by the Government of Vietnam. Rice producers in New South Wales, Australia, use an STE to export their rice, and the Chinese Government controls rice exports. Australia and China have global rice market shares of 3 and 6 percent, respectively. Imports by Indonesia's BULOG accounted for 12 percent of world rice imports from 1994 through 1998. BULOG lost its exclusive authority to import rice in 1998, but continues to import rice as needed. Other import-oriented rice STEs are the Philippines' National Food Authority (4 percent of world imports), China's COFCO (4 percent), the Iranian Government (5 percent), and Malaysia's Bernas (3 percent).

State Trading in Dairy Products

The chief dairy export STE, the New Zealand Dairy Board, handles about 30 percent of world dairy product exports. Smaller dairy export STEs—the Australian Dairy Corporation, the Canadian Dairy Commission, and the Polish Agricultural Marketing Agency—handle some, but not all, of their country's exports. The largest dairy exporter, the EU, does not use an STE to export dairy products, but the EU Commission administers export subsidies for private sector sales of dairy products, particularly butter, milk powder, and cheese.[3] Mexico's Compania Nacional de Subsistencias Populares (CONASUPO) largely handled Mexico's milk powder imports, which accounted for about 31 percent of global nonfat dry milk imports from 1993 through 1997, until private firms began to import large quantities of milk powder in 1998. After announcing that it would close CONASUPO on March 31, 1999, the Mexican Government permitted another federal agency, LICONSA, to import milk powder for the government's social programs, and began auctioning import permits for milk powder to the private sector July 7, 1999.

State Trading in Sugar

Governments heavily regulate the pricing, marketing, and trade of sugar, although STEs are not the sole administrators of national policies, and the STE with the largest share of world exports, the Queensland Sugar Corporation (QSC), is owned by its producers. In addition to QSC, which accounted for 11 percent of world sugar exports from 1994 through 1998, Cuba (8 percent of world exports) and Ukraine (4 percent of world exports) also use STEs to export their sugar. Exporting countries that do not use STEs to administer their pricing policies are the European Union, Brazil, and Thailand, although the EU and Brazil heavily regulate the pricing and marketing of sugar. India, a net exporter in some years but a net importer in others, allowed private firms to export sugar in 1997. Among the much larger number of importing nations, China uses an STE to import its sugar, as do other smaller importers such as Morocco. The European Union, Canada, and the United States heavily regulate sugar prices and imports through tariff-rate quotas, but do not conduct trade through STEs. Indonesia revoked the exclusive sugar import authorities of its chief agricultural STE, BULOG, in September 1998.

[3]U.S. private firms export U.S. dairy products, although the CCC exported dairy products from its inventories prior to 1996. The CCC also continues to approve direct export subsidies on sales of eligible dairy products under the Dairy Export Incentive Program (DEIP).

Countries Reported a Wide Range of Agricultural STEs to the WTO

Countries must report their STEs to the GATT, now the WTO.[4] More than 30 countries reported close to 100 agricultural enterprises or other agricultural organizations to the WTO in 1995 and 1996. The notifications covered many different types of STEs and a large number of traded agricultural products. (See box, "What Types of STEs Are Reported to the WTO?")

The largest export-oriented STEs reported to the WTO in 1995 and 1996 were the Canadian Wheat Board, the New Zealand Dairy Board, the Australian Wheat Board, and the Queensland Sugar Corporation (see table 2). The four largest STEs each exported more than $900 million annually of their designated agricultural commodities between 1992 and 1995. Other export-oriented STEs marketed grains, dairy products, meats, sugar, fruits, and vegetables.

Australia, Canada, New Zealand, and South Africa reported numerous marketing boards. Australia's States maintain marketing boards for commodities such as barley, sugar, and rice, although the Australian Wheat Board is a federal-level board.[5] Canada reported federal-level marketing boards for grains and dairy products, as well as numerous provincial-level boards for beer, wine, and distilled liquor. New Zealand's farmers also marketed livestock, dairy, and an extensive list of horticultural products through marketing boards, although internal reforms in the past two decades reduced many of New Zealand's

[4]Until this year, countries reported information about their STEs to the GATT and its successor, the WTO, on the basis of a questionnaire that was adopted in 1960. Reports of STEs, called notifications, are due to the WTO's Council for Trade in Goods once every 3 years. After several years of intense debate in the WTO's Working Party on State Trading Enterprises, negotiators updated and expanded the 1960 questionnaire in 1998. Countries were required to follow the revised questionnaire as they reported their STEs to the WTO by September 30, 1998. Most countries did not submit notifications, and not all of the submitted notifications responded to the more detailed questions of the 1998 questionnaire. A more comprehensive listing of WTO country notifications for agricultural STEs can be found in Appendix B.

[5]Many of the export marketing boards in Australia and New Zealand are not government agencies, but are owned by their producers. However, their governments continue to grant them authority to act as sole exporters of one or more commodities for their State or country.

Table 2—STEs in Canada, New Zealand, and Australia dominated the list of export-oriented STEs from 1992 through 1995

Country	STE	Commodity(ies)	Average annual export value
			$ million
Greater than $1 billion:			
Canada	Canadian Wheat Board	Wheat, barley	3,213
New Zealand	New Zealand Dairy Board	Dairy products	1,805
Australia	Australian Wheat Board	Wheat	1,401
More than $500 million - $1 billion:			
Australia	Queensland Sugar Corporation	Raw sugar	925
$100 million - $500 million:			
Australia	New South Wales Rice Marketing Board	Rice	361
South Africa*	Unifruco for the Deciduous Fruit Board	Apples, apricots, grapes, nectarines, peaches, pears, plums, prunes	286
New Zealand	New Zealand Kiwifruit Board	Kiwifruit	237
Turkey	Soil Products Office	Wheat, barley	194
South Africa*	Maize Board	Corn	194
New Zealand	New Zealand Apple and Pear Marketing Board	Apples, pears	192
South Africa*	Citrus Board	Citrus fruits	184
Israel	Ornamental Plants Board	Cut flowers	129
Australia	Australian Dairy Corporation	Dairy products	128

* South Africa terminated the authorities and operations of its marketing boards in 1997.
Source: Member countries' 1995 and 1996 notifications to the World Trade Organization (WTO) of their State Trading Enterprises. Australia and Israel reported their STEs' exports for 1993 through 1995. Canada, New Zealand, South Africa, and Turkey reported for 1992 through 1994.

marketing boards' domestic market and trading authorities. Many New Zealand boards have relinquished their exporting activities to private firms, but coordinate exports through export licensing to import markets regulated by tariff-rate quotas such as the EU, Japan, and the United States, and continue to conduct market promotions. South Africa dismantled its many marketing boards in 1996 and 1997 and ended its export subsidies in July 1997. Among the products marketed by some of South Africa's largest boards were apples, grapes, citrus fruits, and corn.

The list of import-oriented STEs reported to the WTO is far less complete than that of the exporters (see table 3). Asian countries house the most numerous and largest net importing STEs. The top import-oriented agricultural STEs in WTO member countries were the Japan Food Agency and Indonesia's Badan Urusan Logistik (BULOG). Both imported agricultural commodities valued at more than $1 billion annually on average from 1993 through 1995. The Japan Food Agency is the largest Japanese agricultural STE, although other STEs in Japan import and resell tobacco, silk, and some dairy products.

Indonesia's BULOG, established as a government agency in 1967 to stabilize agricultural commodity prices at the producer and consumer levels, was authorized in the 1993-95 reporting period to import several agricultural commodities, export rice, administer the marketing and processing of selected domestically produced and imported agricultural commodities, procure domestic rice production, and manage rice stocks. A government edict revoked BULOG's exclusive trade authorities in September 1998, but the agency has continued to procure commodities, manage stocks, and import rice during Indonesia's financial crisis.

Table 3—Japan and Indonesia topped the list of import-oriented STEs from 1993 through 1995

Country	STE	Commodity(ies)	Average annual import value
			$ million
Greater than $1 billion:			
Japan	Food Agency	Barley, wheat, rice	2,003
Indonesia	Badan Urusan Logistik[1]	Garlic, rice, soybeans, sugar, wheat, wheat flour	1,335
More than $500 million - $1 billion:			
Egypt[2]	General Authority of Supply Commodities (GASC)	Wheat	713
Japan	Japan Tobacco Agency	Leaf tobacco	593
$100 million - $500 million:			
Korea	Livestock Products Marketing Organization[3]	Beef	432
Pakistan	Ministry of Food, Agriculture, and Cooperatives[4]	Wheat	378
Mexico	CONASUPO[5]	Milk powder	329
Tunisia	Grain Board	Wheat, barley, maize	227
Morocco	National Sugar and Tea Office	Raw sugar	125
Malaysia	Padiberas Nasional Berhad (Bernas)	Rice	121

[1]Indonesia terminated Badan Urusan Logistik's (BULOG) monopoly over imports of garlic, soybeans, sugar, wheat, and wheat flour and opened imports of those products to private firms in 1998. BULOG imported rice for the first time through an open import tender in September 1998, but BULOG's future role in rice imports and marketing is unclear. [2]Egypt opened imports of wheat to private firms in 1993. GASC handled an estimated 60 percent of wheat imports in 1997, but its imports as a share of total Egyptian wheat imports for prior years are not known. [3]The LPMO purchased 90 percent of Korea's beef imports in 1993, 84 percent in 1994, and an estimated 70 percent in 1995. The Korean Government allocated up to 60 percent of the beef tariff-rate quota to private traders in 1998. [4]Pakistan opened imports of wheat to the private sector in 1991, but government pricing policies restricted private sector imports until 1998 when the private sector imported 1 million tons of wheat. In June 1999, the Government of Pakistan imposed a ban on private sector wheat imports. [5]Mexico's CONASUPO was a monopoly importer of milk powder until 1998 when the Mexican Government issued import licenses equal to about 20 percent of Mexico's milk powder imports to a multinational firm. The Mexican Government closed CONASUPO on March 31, 1999.
Sources: STEs reported in member countries' WTO notifications of their State Trading Enterprises and various USDA, Foreign Agricultural Service attache reports. Egypt, Pakistan, and Mexico did not notify the above agricultural STEs to the WTO. Trade data come from WTO notifications, Korea and Japan's national trade statistics, and U.N. Food and Agriculture Organization annual trade statistics.

The Republic of South Korea designated 8 STEs to import 18 agricultural products, including beef, citrus fruits, and rice, under its WTO tariff quotas.[6] STEs for several agricultural commodities also were reported by Malaysia (rice), the Philippines (rice and corn), and Thailand (potatoes, tea, and tobacco). Appendix B contains a list of agricultural STEs reported to the WTO in 1995 and 1996.

The WTO notifications provided an incomplete picture of the prevalence of state trading in world agricultural trade. WTO members reported their enterprises based on their individual interpretations of the 1994 GATT working definition. Many countries such as Egypt, Mexico, and Pakistan reported that they had no STEs for agricultural products, although these countries did use STEs to import agricultural commodities during the reporting period (1992 through 1995). Egypt opened imports of wheat to private firms in 1993, although it maintained the General Authority of Supply Commodities (GASC) as an importer. GASC handled an estimated 60 percent of Egyptian wheat imports in 1997. Pakistan opened imports of wheat to the private sector in 1991, but the government handled all of Pakistan's wheat imports until 1998. After wheat imports by private firms boomed in 1998, the Government of Pakistan banned private sector imports in June 1999. CONASUPO was Mexico's designated importer of milk powder until 1998 when the Mexican Government issued a large block of import licenses to a multinational firm. The Government officially closed CONASUPO March 31, 1999.

STEs in Countries Seeking Accession to the WTO

Many applicants to the WTO conduct their trade of grains and other agricultural products through state agencies. In principle, STEs in the former Soviet republics have been eliminated, but regional and national governments continue to procure commodities from farmers and restrict commerce between regions. Foreign trade companies in these countries continue to be directly or indirectly controlled by the government and are akin to state traders. STEs maintain control over grain trade in other countries seeking accession to the WTO, including Algeria, Saudi Arabia, and Vietnam.

China, the largest country seeking accession to the WTO, has several enterprises that fit the WTO definition of state trading enterprises (table 4). In 1978, China "decentralized foreign trade rights beyond the handful of centrally controlled foreign trade corporations" (Martin and Bach, 1998, page 290). However, China maintained its agricultural STEs—China's National Cereals, Oil and Foodstuffs Import and Export Corporation (COFCO) and China National Textiles Import and Export Corporation (Chinatex)—to conduct foreign trade in grains and cotton.[7] China's state control of grain trade is defined more explicitly in Section V, "Ranking STEs with Respect to Their Capacity To Distort Trade."

[6]The Republic of South Korea designated STEs to administer some of its WTO tariff-rate quotas (TRQs) to serve the following objectives: (1) to stabilize domestic markets faced with low-priced imports; (2) to fulfill Korea's Uruguay Round Agreement market access commitments; and (3) to use the revenue from differences between domestic and import prices for public objectives such as research and market development (Choi, Sumner, and Song, 1998).

Artificial honey and cocoons were removed from Korea's list of state trading items in June 1996, and silk was removed from the list in June 1997.

[7]If China accedes to the WTO, China's leaders have agreed to expand import access for many sensitive agricultural commodities, including soybean oil, wheat, corn, rice, cotton, and barley; to designate and expand shares of the proposed TRQs for private sector importers; and to open state trade shares of the TRQs to private importers of wheat, corn, and rice if the state traders do not fill the TRQ during the year (Office of the United States Trade Representative,"Market Access and Protocol Commitments," http://www.ustr.gov/release/1999/04/ch-memo.pdf, April 1999).

Table 4—China's state enterprises dominate trade in some agricultural products

STE	Commodity	Average export/import value, 1993-95
		$ million
Exports:		
China National Cereals, Oil and Foodstuffs Import and Export Corporation (COFCO)	Corn	704
COFCO, other state-owned enterprises (SOE's)	Sugar	368
Native Products and Animal Byproducts Company	Tea	308
COFCO	Rice	261
Imports:		
COFCO	Wheat	1,268
COFCO, other SOE's	Vegetable oils	1,140
Chinatex	Cotton	758
COFCO	Corn[1]	272
COFCO	Rice	203

[1]Most of China's 1993-95 corn imports took place in 1995.
Sources: USDA, FAS information about China's STEs. Trade data are from the UN Food and Agriculture Organization.

What Types of STEs Are Reported to the WTO?

In a 1995 working paper, WTO staff reviewed the types of STEs reported by WTO member countries from 1960 through 1994, including statutory marketing boards, regulatory marketing boards, fiscal monopolies, canalizing agencies, and foreign trade monopolies (WTO, 1995b). In agriculture, statutory marketing boards combine a monopoly of foreign trade with management of domestic procurement, pricing, and distribution. Their typical functions include control over the pricing, quality standards, and the marketing of agricultural products that they cover. Regulatory marketing boards perform many of the same functions as statutory marketing boards, but do not themselves engage in trade. Canalizing agencies channel imports or exports through a designated product-specific agency to obtain better terms of trade for large volume sales or purchases and to recognize economies of scale in trade operations. Regulatory boards and canalizing agencies tend to be government agencies or corporations, while agricultural producers own some statutory marketing boards.

A large group of STEs falls under the definition of fiscal monopolies. Governments establish fiscal monopolies to control trade in goods for which domestic demand is relatively inelastic but foreign demand is relatively elastic (WTO, 1995b). The fiscal monopoly controls imports, and may support domestic production (for instance, national cigarette manufacturers in some countries). This allows the government to garner funding for the national treasury from markups on imported products. In agriculture, alcoholic beverages and tobacco are the chief products imported by government fiscal monopolies.

The last large group of STEs, foreign trade enterprises, were established by centrally planned economies to import products as ordered by other government agencies. Foreign trade enterprises shielded centrally planned economies from world market influences because they imported only as ordered by central government planners according to plan targets, which determined the level and direction of trade. Central planning no longer dictates levels of trade in most transition economies, but continues as a major influence on agricultural trade, particularly in China and some other countries seeking accession to the WTO.

III. Why Do Countries Pursue State Trading of Agricultural Products?

Both developed and developing countries establish state trading enterprises to attain domestic policy objectives. Countries cite support for domestic producers, price stabilization for producers or consumers, and the assurance of reasonably priced food supplies as major policy objectives for STEs in their reports to the WTO (WTO, 1995b; various countries' Article XVII notifications to the WTO in 1995-96). Among developed countries, support for domestic producers appears somewhat more frequently as an objective of state trading, while among developing countries, the assurance of reasonably priced food supplies for consumers ranks high. (See box, "Objectives of Selected STEs.")

Governments of developed countries attempt to boost domestic producer prices by granting exporter STEs monopsony power to procure domestic production and by giving them exclusive authority to export. Importer STEs may be established to increase producer returns by restricting imports. To stabilize producer prices, an STE may purchase or sell stocks, pool returns for domestic and/or export sales (for STE exporters), or charge markups on imported products (STE importers).

In developing countries, STEs may administer domestic food policies that hold retail prices below producer and/or world price levels. In these cases, producers are taxed to subsidize consumers. Price stabilization policies in developing countries may subsidize both consumers and producers (and all of the participants along the marketing and processing chain for the supported commodities). The STE controls the procurement, distribution, marketing, and processing of the covered commodities either by procuring, processing, and distributing the products itself or, more frequently, by contracting with or licensing traders and processors. Generally, the STE has authority to choose its suppliers, customers, and processors.

Other reasons countries pursue state trading include achieving economies of scale in trading operations (for example, transportation, insurance, foreign market development, and quality control),[8] improving terms of trade, and fulfilling international commitments on quantity, price, and credit requirements. Economies of scale in trading operations reduce costs to producers in exporting countries and to consumers in importing countries. Improvements in terms of trade raise prices received by producers when an STE exporter achieves higher prices on the world market or an STE importer restricts imports. Improvements in terms of trade benefit domestic consumers when an STE importer can command lower import prices. Agricultural trading countries argue that, by designating an STE to export into a higher value market regulated by a tariff-rate quota, producers benefit from the higher prices.

Governments also establish STEs to provide capital funds to initiate entrepreneurship, ration foreign currency reserves, and generate revenue for the treasury. Monopoly rents garnered by STEs may fund other government programs. For example, several governments that hold a monopoly on imports of alcohol and tobacco use the markups from domestic sales of these products to finance health and education programs. Though not stated explicitly in any of the country notifications, many governments prefer STEs because STEs allow them flexibility to carry out political mandates expeditiously. Hence, it is not uncommon to see governments use STEs to implement policies that would otherwise receive parliamentary scrutiny (treasury-financed subsidies). Similarly, state trading is often preferred to taxes/subsidies for redistributing incomes among different groups because it is more convenient and less likely to give rise to political protests. Indeed, it is the nontransparent nature of STE activities that makes them preferable over other policy instruments.

While state trading is one means of attaining various domestic and trade policy objectives, it is not the only means. Income support for producers, for instance, can be accomplished through decoupled payments, an approach that may minimize trade-distorting effects. Similarly, governments can provide affordable food supplies to their lower income citizens by targeting specific populations for either income supplements (food stamps) or specific staple commodities instead of operating government price controls and processing programs.

[8] If marketing costs account for a relatively important part of the export price, pooled arrangements can have an impact on the market.

Some argue that the goals of STEs—including the management of price risk, economies of scale associated with marketing, and development of niche markets and new customers through market development—can be accomplished just as efficiently, or even more efficiently, by the private sector. Carter, Loyns, and Berwald, for example, demonstrated that the Canadian Wheat Board provides more marketing services than is economically efficient (Carter, Loyns, and Berwald, 1998).[9]

[9]Carter, Loyns, and Berwald cite the following as marketing costs that might be reduced if the private sector carried out marketing activities: excessive handling charges, overage credits (credits paid out of the pools by the CWB because the average quantity of grains company terminal sales marginally exceeded purchases), demurrage costs (costs levied against the shipper when a ship is not loaded on time), excess grain cleaning, and free barley storage for maltsters.

Objectives of Selected STEs

Net exporters:

Australian Wheat Board (AWB)
Maximize net returns to growers (Wheat Marketing Amendment Act of 1997).

Canadian Wheat Board (CWB)
1. Maximize producer income.
2. Market grain grown in Canada in "an orderly manner in interprovincial and export trade"
(CWB Act of 1989 as amended).

New Zealand Dairy Board (NZDB)
Maximize the income of New Zealand dairy farmers through excellence in the global marketing of dairy products (Dairy Board Act of 1961).

Queensland Sugar Corporation (QSC)
Maximize net returns to growers (Queensland Sugar Industry Act of 1991).

Net importers:

Indonesia's Badan Urusan Logistik (BULOG)
Stabilize the price of agricultural commodities at both consumer and producer levels
(Presidential Decree of May 10, 1967).

Japan Food Agency (JFA)
Stabilize supply and demand situations and prices for staple foods such as rice, wheat, and barley to promote the stability of national life and the economy (Law for Stabilization of Supply-Demand and Price of Staple Food).

Livestock Products Marketing Organization (LPMO-South Korea)
Stabilize the livestock market (1988-Civil Code).

Mexico's Compania Nacional de Subsistencias Populares (CONASUPO)
Support farm prices and incomes and guarantee consumers an accessible, reasonably priced food supply.

IV. Evaluating the Market Impacts of STEs

To study the market impacts of state trading activities, one approach would be to examine the effects that such enterprises have on domestic and international prices. For instance, a state trader that restricts imports into a country will increase domestic prices in the same way an import tariff does. Similarly, an STE that expands exports will have an effect on domestic price that resembles an export subsidy. Thus, we can explain the market effects of STEs by expressing their impacts on prices in terms of tariff or subsidy equivalents. This tariff/subsidy equivalent approach dispenses with the need for a special theory of state trading.

The analytical framework for measuring the tariff/subsidy equivalent of state trading enterprises is well established in the literature (Dixit and Josling, 1997; Lloyd, 1982). Consider an STE that faces an import demand function represented by ED and an excess (export) supply function ES that is perfectly elastic (limitless availability of the commodity) at the world price P_w (fig. 2). If the STE sells at the same price (account being taken for handling costs and tariffs applicable to all firms), then the tariff equivalent—represented by the gap between domestic and world prices—is zero. Consumers can obtain an unrestricted volume of imports at the world price and the existence of an STE importer has no additional effect on market prices or trade. The STE behaves no differently than a private firm under competitive market conditions. If the STE sells at a price higher than the world price, then the market effects of the STE can be represented as the difference between the domestic and world prices (P_m-P_w). In other words, the existence of an STE leads to a domestic price that is greater than world price by t, the tariff equivalent. The trade impact of the STE is the reduction in import volume (M_0-M_1) that would be caused by the tariff equivalent (t). If the STE sells at a price lower than the world level, then the trade effect is the increase in imports from the subsidy equivalent.

A similar approach can be used to represent a state trading exporter. Consider an STE exporter that exhibits an excess (export) supply schedule ES and faces an excess demand (import) schedule ED that is perfectly elastic (limitless demand for the commodity) at the world price P_w (fig. 3). At a domestic price of P_m, the STE is willing to export X_1 quantity of the commodity. But this can be done only if the STE offers an export subsidy of s in the world market. The per unit subsidy s is analogous to the tariff equivalent of the STE importer, and the trade effect is X_1- X_0, the amount by which export expands beyond levels corresponding to price P_w. The level of export subsidy equivalent multiplied by the quantity of exports equals the total expenditure on export subsidies.[10] If the domestic price offered to producers is lower than the

[10]It is worth noting that the WTO Agreement on Agriculture disciplines export subsidies in terms of total expenditures and not on a per unit basis as with tariffs.

Figure 2
Tariff equivalent for STE importer

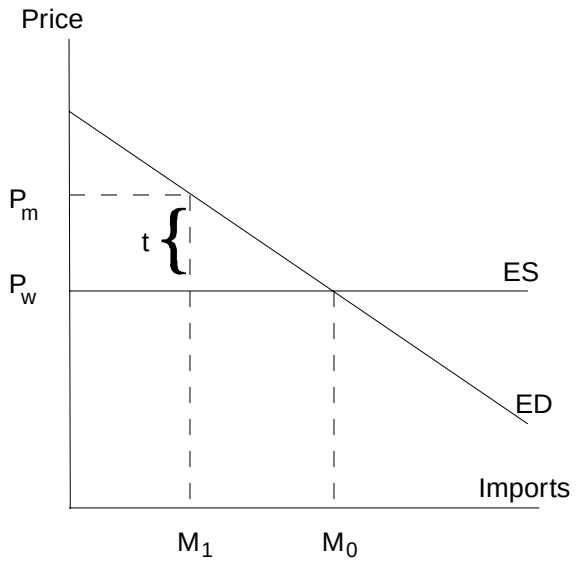
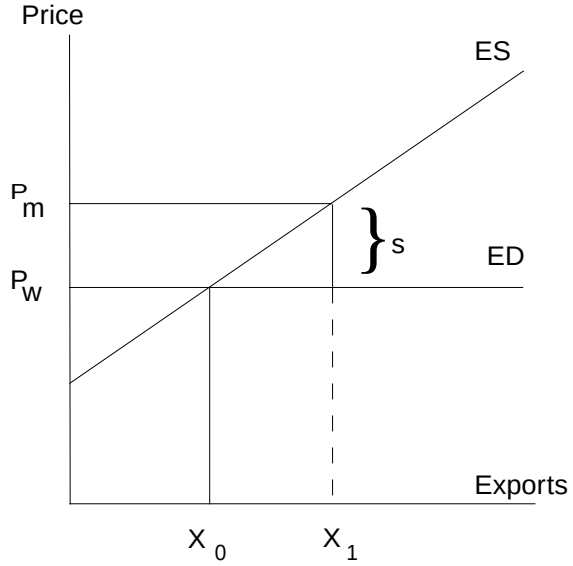


Figure 3
Export subsidy equivalent for STE exporter



world price, then the trade impact is the reduction in exports caused by the tax equivalent.

Although we focus on the trade impacts of STEs, we should not lose sight of the associated effects of STEs on the domestic market. An STE that curtails imports is likely to induce expanded production and reduced domestic demand compared with free-market levels. Conversely, an STE that pursues policies that subsidize food consumption is likely to cause decreases in domestic supply and increases in consumption beyond free-market levels. Each of these can have far-reaching income and welfare implications.

Preconditions for State Traders To Influence Domestic Prices and Trade

A state trading enterprise can maintain a price gap between domestic and world prices (tariff/subsidy equivalent) and affect external trade if it is able to influence domestic prices by altering the volume of the product available in the market.[11] Thus, an STE importer that attempts to raise consumer prices by holding back sales will succeed only if it does not face competition from domestic sellers. Similarly, an STE exporter seeking to maximize its profits might want to lower the price it offers to producers by restricting the volume of purchases. But again, for this to succeed, the STE exporter must be able to control domestic purchases of the product. Otherwise, domestic producers could sell their product to competitors and acquire better prices. Domestic market power, or the ability to control the volume of products bought and/or sold in the internal market, is an essential precondition for STEs to influence the market.

To exercise domestic market power, an STE must also be able to control commodity trade in and out of the country. Consider again the STE importer that seeks to raise the price paid by domestic consumers by restricting sales volume. If the STE has no quantitative controls over imports, then buyers can always satisfy their needs from imports even in the absence of other domestic sellers. The STE importer will not be able to sustain a higher price, and the quantity of imports will be no different from that of a competitive firm. A similar situation exists for STE exporters.

[11]These represent some of the basic preconditions for STEs to influence domestic prices and trade. They are by no means exclusive, and other factors relative to the structure and behavior of STEs also would influence the market. We point out some of these factors when we classify major STEs later in the report and in Appendix C.

Take the case of the STE exporter that acts as the sole buyer of domestic output (monopsonist) and tries to minimize its purchasing costs. The monopsonist might wish to purchase less than under competitive market conditions. But this would require export controls (or the compulsory purchase of all domestic products, which implies a ban on exports). If domestic suppliers can export, then the monopsonist loses its market power. Export restrictions are, therefore, the key issue with respect to the use of monopsony power on the domestic market. Such restrictions are the vital link between the use of monopsony power and impact on trade flows.

Another prerequisite for an STE to influence prices and affect trade is its ability to regulate substitute products. An STE importer may control the market for a particular product, but its ability to influence prices is greatly diminished if buyers can purchase substitute products from other sources. For instance, an STE importer may be unable to raise rice prices if consumers are willing to eat wheat instead, which is available under competitive market conditions. Similarly, an STE exporter will have little market power if sellers can offer substitute products over which the STE has no control. For instance, the monopoly power of an STE that offers rice producers prices lower than world levels would be meaningless if a substitute crop could be grown on the same land and exported without restrictions. Clearly, the existence of nonregulated substitute commodities will substantially affect an STE's ability to influence the market for regulated commodities.

An STE can affect trade if it can exploit differences in price responsiveness, either between domestic and international markets or among individual global markets (Houck, 1986, page 112). For instance, the Canadian Dairy Commission can charge higher prices for milk to be consumed at home than for dairy products destined for export because demand for milk in Canada is relatively less responsive to price changes than dairy product demand in Canada's export markets. With exclusive authority over Australian wheat exports but not over domestic wheat sales, the Australian Wheat Board attempts to obtain price premiums in less price-responsive markets like Japan while selling at lower prices to other export markets that are more price responsive. Exploiting differences in price responsiveness can work as a pricing strategy if there is no arbitrage between the two markets. Price discrimination strategies also become costly when exporters compete for the same markets.

Factors Influencing the Tariff or Subsidy Equivalent

Several factors influence the tariff/subsidy equivalent associated with a state trading agency, including the degree of control that the STE has over the domestic market, the STE's policy objectives, the extent of the STE's international market power, and the range of privileges that are exclusive to the enterprise. These factors not only influence the tariff equivalent associated with the state trader but also determine the type of policy instrument the STE might use.

Degree of Control Over Domestic Markets

The principal factor that influences the magnitude of the tariff/subsidy equivalent associated with an STE is its degree of domestic market power. In general, the greater the market power an STE possesses, the more it can influence prices and the volume of products traded. An STE's domestic market power depends on both the array of market activities that it controls as well as the range of commodities that it regulates.

An STE's control over four specific activities—domestic marketing, procurement (i.e., sales and purchases), imports, and exports—determines its capacity to exercise domestic market power. There are several possibilities in this regard. At one end of the spectrum is an STE that maintains complete control over each of these activities. All transactions, whether in the domestic or international markets, have to be channeled through the STE. The other extreme is an STE that has no control over any of these activities. Presumably, the STE in this situation behaves no differently from a competitive private firm, and the possibilities for an STE to influence the domestic market are very limited. Thus, an STE that controls the full gamut of marketing activities will affect prices and the tariff/subsidy equivalents much more than a state trader that controls only one of these activities.

Similarly, an STE's market power depends on its capacity to differentiate products and regulate use of substitutes. Hence, the larger the number of substitute products over which an STE has regulatory control, the greater its ability to manipulate the market and influence the tariff/subsidy equivalent. This capacity is likely to be even greater if the STE controls upstream and downstream marketing and processing activities and engages in transfer pricing as a consequence of vertical integration.

Breadth of Policy Objectives

The policy goals of an STE influence the magnitude of its tariff/subsidy equivalent. For instance, an STE importer that seeks to maximize its own profits can do so by exploiting consumers, producers, or both. The tariff equivalent of the policy set in each case would be different. If the objective is to maximize profits by taxing consumers, the tariff equivalent is the difference between the world price and the higher price at which imports are sold to consumers. Conversely, if the objective of the STE is to tax producers, the tariff/subsidy equivalent is the difference between the world price and the lower acquisition price offered to producers. However, if the STE importer controls domestic marketing as well and decides to exploit both consumers and producers to maximize its profits, imports could be sold domestically at a high price and domestic products could be purchased at a low price. With market differentiation, the tariff/subsidy equivalent would have to be calculated separately either as producer and consumer subsidy equivalents (OECD, 1987), or from a combination of price differences faced by producers and consumers (Roningen and Dixit, 1991). This type of market differentiation existed in several countries of the former Soviet Union.

It is possible that a state trader is in place to support the producer monopoly, working with producers to exploit domestic consumers. If the entire rent is to be distributed to producers through higher prices, then the tariff equivalent of the STE is the gap between domestic and world prices. If only part of the rent is passed on to producers in the form of higher prices, then the tariff/subsidy equivalent, as earlier, will depend on the combination of prices faced by producers and consumers. Marketing boards in some exporting countries are examples of state traders that seek to support producers by exploiting consumers.

If the state trader is in place to support consumers through lower food costs, then it would keep domestic prices below world levels. The trade impact of an STE is measured by the subsidy or tax equivalent on consumers only.

STEs may have access to a wide variety of trade instruments to alter consumer and producer prices. For instance, consumer prices could be increased either through an import tariff or quantitative trade controls, such as quotas or licenses. Similarly, producer prices could be lowered by using import subsidies

or export controls. While the tariff/subsidy equivalents in either case would be the same, an STE that relies on quantitative restrictions on imports (or exports) is likely to distort international trade much more than an STE that obtains its protection from tariffs/subsidies. From a free-trade perspective, therefore, an STE that is supported by tariffs/subsidies is preferred to one that resorts to nontariff trade barriers.

Extent of International Market Power

The tariff equivalent is defined as the difference between domestic and world prices, taking into account all associated transaction costs and tariffs. Hence, the tariff equivalent attributable to an STE also depends on the extent of its international market power. The analytical exercises presented in figures 2 and 3 assume that a state trader cannot influence world prices. But, this may not be the case. For instance, a few large sellers dominate the global wheat market. Thus, an STE exporter with market power could hold back sales in the international market to achieve higher world prices and increased total revenue.[12] As before, the tariff/subsidy equivalent of the STE is the difference between the domestic price and world price, though the difference is likely to be lower because the state trader could raise international prices as well. Similarly, an STE importer with international market power could force purchases at lower prices by restricting purchases.[13] The difference between the domestic and international price is the tariff equivalent, and the gap is likely to be greater with international market power because of the STE's ability to lower world prices. In general, the greater the international market power that a state trader enjoys, the more it can influence the tariff/subsidy equivalent.

Range of Exclusive Privileges

The range of exclusive or special privileges available to an STE can substantially affect the tariff/subsidy equivalent. Special privileges might include the financial benefits that accrue to an STE as a result of governmental association, such as underwriting of producer payments, interest rate subsidies, tax benefits, and preferential foreign exchange rates, or nonfinancial privileges such as the authority to establish long-term trade agreements with other governments. These privileges, in general, are likely to be affected by the ownership structure of the STEs; that is, the extent of managerial control that the government exercises over the enterprise. For instance, an STE that is owned by the government and has been established to provide income and price stability may behave differently than an STE owned by producers determined to maximize profits. Or, an STE that is owned by the government and is guaranteed against bankruptcy is likely to follow different trading practices than a commercial firm operating without government assistance.

Exclusive privileges, particularly financial support, allow STEs to undertake pricing risks beyond what a commercial enterprise might, especially if the state trader has goals other than profit maximization. Such privileges could lead to prices and tariff equivalents different from those that would exist in the absence of such privileges. The greater the array of privileges available exclusively to the STE, the more it can influence prices and the tariff/subsidy equivalent.

Some Closing Thoughts on the Tariff/Subsidy Equivalent Approach

The tariff/subsidy equivalent approach proposed here captures most of the trade effects associated with STEs. In Appendix C, we point out how this methodology takes into account the trade effects of STE activities that evoke the most controversy, including cross-subsidization across markets, price pooling, and the competitive advantage such firms secure from governmental association. From this perspective, the methodology appears relatively robust. But, there are several weaknesses with this approach. For instance, data limitations may make it difficult to isolate the trade impacts exclusive to the STE if other distortionary forces exist. Similarly, the approach is geared toward obtaining the trade impacts of STEs over a period of time rather than assessing the distortionary implications of state trading practices that involve undercutting competitors on a transaction-by-transaction basis or the use of predatory pricing to drive commercial competitors out of the market.

For these special circumstances, the tariff/equivalent methodology may be somewhat inadequate. But overall, we find this approach extremely appropriate for measuring the trade distortion associated with STEs, given its simplicity, elegance, and the ease with which it allows comparisons across diverse parastatal institutions.

[12]In economic parlance, the trader would equate its excess supply schedule with the export revenue function and impose an optimal export tax.

[13]This is tantamount to introducing an optimal import tariff.

V. Ranking STEs with Respect to Their Capacity To Distort Trade

One of the primary goals of the WTO is to move toward freer trade while taking into account the existence of state trading enterprises. To this extent, quantitative measures of the trade impacts of such enterprises, as represented by tariff/subsidy equivalents, are desirable. Such information shows what types of institutions are most distortive and what activities might need disciplining. Attempts to capture the quantitative impacts of such entities and their activities on international agricultural trade have just begun. Progress has been slow because of the proprietary nature of the information sought.[14] Besides, where the tariff/subsidy equivalents have been calculated, it has been difficult to argue convincingly that they solely represent the effects of STEs and not other factors that influence trade. An example is an STE that manages import licenses and is responsible for implementing health and sanitary measures.

A classification scheme—or taxonomy—that provides qualitative indications (or ordinal ranking) of the trade impacts of such enterprises is needed to understand and to analyze the market effects of STEs. Such a scheme, if based on a strong conceptual foundation, can be useful in several respects. Most obviously, it would provide a basis for evaluating state traders in terms of their distortionary capacity. This would be similar to approaches used in the WTO with respect to the Agreement on Agriculture (green and amber boxes) and the Agreement on Subsidies (permissible or nonpermissible). Moreover, a classification scheme can provide a snapshot of the similarities and differences among STEs in terms of their broad economic traits. Policymakers might find it useful to know, for instance, if the Canadian Wheat Board, the Australian Wheat Board, or the Commodity Credit Corporation are comparable with respect to economic characteristics such as market power, use of trade policy instruments, and their linkages to the government. Finally, a classification scheme provides a framework for development of a dynamic inventory of STEs as their powers and institutional structures change over time.

[14]For example, the Canadian Wheat Board (CWB) does not make public information on transaction prices and quantities of individual wheat and barley sales. Without these data, it is very difficult to establish meaningful domestic and export prices for Canadian wheat since the CWB publishes only its pool prices derived from a combination of domestic and export prices.

What might be an appropriate classification scheme to understand the economics of state trading enterprises? If the objective is to evaluate STEs in terms of their capacity to distort trade, then our discussion on the tariff/subsidy equivalent approach suggests there are three basic preconditions that need to be taken into consideration: the extent of control over the domestic market, the ability to influence international trade, and regulatory authority over substitute products. To keep it simple, we will initially confine our classification scheme to the first two characteristics, and later explain how this might change in a multiproduct environment.

Creating a Classification Scheme for STEs

Table 5 presents a simple classification scheme for STEs based on their ability to control domestic markets and external trade. The classification scheme helps policymakers to identify enterprises that have the greatest potential to distort trade, to compare agricultural STEs in terms of their broad economic traits, and to provide a framework for the development of a dynamic inventory of STEs as their powers and institutional structures change.

A Type I STE operates without any controls on either domestic markets or international trade. In other words, the STE is competing with private firms on a level playing field. Clearly, Type I STEs have little, if any, capacity to affect the market, and their potential to distort trade is negligible.

A Type II STE operates without any restrictions on external trade but maintains control over the domestic market. Market controls may take the form of price regulation, supply control, procurement, and domestic marketing. Domestic consumers (producers) can resort to international markets for purchases (or sales), suggesting that domestic controls without trade restrictions do not significantly violate competitive norms. The potential to distort trade for a Type II state trader is low.

A Type III STE competes with private firms to procure and sell domestic production in the home market, but maintains quantitative controls on external trade. These STEs have the potential to moderately distort trade, but the actual extent of distortion would depend on factors such as the extent of international market power, the range of exclusive privileges available to the firm, the policy objectives of the STE, and the

Table 5—Classifying STEs based on their control of domestic markets and trade

Type	Trade controls	Domestic market controls	Potential for trade distortion
Type I	No	No	Negligible
Type II	No	Yes	Low
Type III	Yes	No	Moderate
Type IV	Yes	Yes	High

Source: Dixit and Josling, 1997.

importance (share) of external trade in domestic consumption and production.

A Type IV STE imposes quantitative restrictions on imports or exports and maintains control over the domestic market as well. These STEs are more able to distort trade than the other three groups. But, whether a Type IV STE distorts trade much more than other types of STEs depends on factors that influence the magnitude of the tariff/subsidy equivalents, similar to those indicated for Type III STEs. Thus, a Type IV STE that has a small share of the global market may distort trade less than a Type III STE that is a big player in world trade.

This classification does not account for the multiproduct nature of STEs. We pursued a single-product approach to keep the scheme manageable. But, if the multiproduct element of the parastatal organization is important, two points are worth noting. First, the four types of STEs could be further disaggregated within each group to create subgroups A (single product) and B (multiple product), where Type B could be potentially more trade-distorting than Type A. The disaggregation, though, might be realistically relevant only for Types III and IV STEs because of their potential for moderate to high trade distortions. Second, in a multicommodity setting, the same STE might be classified differently, depending on the commodity under consideration.

Classifying Eight Major State Traders

Can policymakers use the classification scheme to determine which existing agricultural STEs have the greatest potential to distort trade? To illustrate this possibility, we examined the four largest export-oriented agricultural STEs and the three major import-oriented STEs reported by their governments to the WTO in 1995 and 1996. The four export STEs are the Australian Wheat Board, Canadian Wheat Board, New Zealand Dairy Board, and Queensland Sugar Corporation, while the three largest import STEs reported to the WTO in 1995 and 1996 are Japan's Food Agency (barley, rice, and wheat), Indonesia's Badan Urusan Logistik (BULOG) for several commodities, and the Republic of South Korea's Livestock Products Marketing Organization (LPMO) for beef. We also examined a fourth import STE, Mexico's Compania Nacional de Subsistencias Populares (CONASUPO) for milk powder, even though Mexico did not report CONASUPO to the WTO as an STE in 1995 or 1996. CONASUPO was the largest single milk powder importer in the world until March 31, 1999, when the Mexican Government closed CONASUPO's doors. The Mexican Government continues to import milk powder for social programs through LICONSA, and began auctioning import permits for milk powder to the private sector July 7, 1999.

In addition, we applied the classification scheme to the programs of the U.S. Commodity Credit Corporation in the box on p. 19, "Does the U.S. Commodity Credit Corporation Function as an STE?" and to China's state control of grains and oilseeds.

Tables 6 and 7 present important indicators of the control of STEs over domestic supplies and trade. Exporters are distinguished from importers because their behavior can be expected to differ significantly.[15] For each export and import STE, we compared the STE's share of exports or imports, its share of the domestic market, its procurement of domestic production, its export share of domestic production or import

[15]Many of the major export STEs seem to follow export expansion objectives, while STE importers are more interested in restricting trade. The concern with exporting STEs is whether they circumvent the Uruguay Round Agreement on Agriculture export subsidy disciplines. The issue with importing STEs is whether they use nontariff barriers to trade to protect domestic industries. A dichotomy between exporters and importers, therefore, allows us to emphasize that the trade balance of an STE is an important element to consider in designing rules and disciplines for such enterprises.

Does the U.S. Commodity Credit Corporation Function as an STE?

The Commodity Credit Corporation (CCC), a government-owned and operated corporation within the U.S. Department of Agriculture (USDA), was created to stabilize, support, and protect farm income and prices. The 1948 Commodity Credit Corporation Charter Act gives the CCC wide-ranging authorities to support prices of agricultural commodities through loans, purchases, payments, and other operations, and makes available materials and facilities required in the production and marketing of agricultural products. The Act authorizes the sale of agricultural commodities to other government agencies and foreign governments and food donations to domestic, foreign, or international relief agencies. The CCC also is authorized to develop new domestic and foreign markets and marketing facilities for agricultural commodities (G/STR/N/1/USA, September 29, 1995). The CCC has an authorized capital stock of $100 million and is able to borrow up to $30 billion at any one time.

Congress limits the authorities of the CCC when it defines the structure of domestic support and export programs in multiyear farm bills. The U.S. notifications to the WTO in 1995 and 1996 covered the CCC's activities from 1992 through 1995. Through USDA's Farm Service Agency (FSA), the CCC operated USDA price and income support programs for numerous commodities, including wheat, corn, oilseeds, cotton, rice, tobacco, milk and milk products, barley, oats, sorghum, rye, honey, peanuts, and sugar. In carrying out the commodity support programs, the CCC acquired inventory by taking title to producer loans which had not been redeemed by loan repayment time and by purchasing dairy products to help support milk prices.

The CCC, through the Foreign Agricultural Service (FAS), has regulated the export prices and quantities for eligible wheat, barley, and other commodities from the mid-1980's under the Export Enhancement Program (EEP) and of eligible dairy products under the Dairy Export Incentive Program (DEIP). The CCC approved sale prices and export subsidy levels for commercial sales under the EEP and DEIP, but did not itself make sales under the EEP or DEIP. The CCC also sold dairy products directly from its inventories through 1995. The United States reports EEP and DEIP subsidies and direct export sales to the WTO under its export subsidy commitments. The CCC also administers the other major USDA export programs: the General Sales Manager export credit guarantee programs, international food assistance programs, and the Food Security Commodity Reserve.

The Federal Agriculture Improvement and Reform (FAIR) Act of 1996 eliminated commodity-specific price and income support programs and replaced most of the programs with fixed farm payments to be phased out in 2002. The 1996 Act emphasizes income transfers rather than commodity price supports. As a result, the legislation discourages the CCC from acquiring commodities as it did in earlier years. The CCC's major export price subsidy program, the EEP, has not assisted export sales of wheat or other major commodities since July 1995 with the exception of a few barley and frozen poultry sales. CCC has continued to use the DEIP to help U.S. dairy product exporters compete in selected export markets.

The CCC's agricultural commodity price support, commodity acquisition, and sales activities have declined sharply since its massive interventions of the mid-to-late 1980's. Today, the CCC continues to act as a conduit for Congressionally approved payments to farmers such as the 1998 crop loss disaster assistance and dairy marketing assistance payments, but the CCC procures U.S. commodities chiefly for domestic food assistance and for donation overseas (Sumner and Josling, 1998).

Classifying the CCC under our scheme is a bit difficult. The CCC does not have monopoly control over the domestic market or trade. The CCC would vacillate between a Type I and Type II classification since its control over domestic markets and trade varies by programs authorized each year, by commodity, and by market conditions. Since the major farm policy reforms of 1996, Type I would be the most appropriate classification for the CCC.

Table 6—Major export-oriented state trading enterprises are types III or IV

STE characteristics	Australian Wheat Board	Canadian Wheat Board	New Zealand Dairy Board	Queensland Sugar Corporation
I. Commodities	Wheat	Western Canadian wheat and barley	Dairy products (butter, milk powder, casein, others)	Raw sugar
II. Trade attributes				
STE share of country's exports	100 percent	Wheat: 96-99 percent Barley: 100 percent	100 percent	100 percent of Queensland raw sugar or 100 percent of Australian raw sugar until 1996 and 1997, when New South Wales and Western Australia exported very small amounts of sugar.
Export share of production	79 percent	Wheat: 75 percent Barley: 22 percent	Butter: 88 percent Cheese: 82 percent Nonfat dry milk: 93 percent	83 percent
Country's share of world trade	13 percent	Wheat: 19 percent Barley: 18 percent	Butter: 22 percent Cheese: 9 percent Nonfat dry milk: 12 percent	11 percent of world sugar (raw and refined) exports.
Exclusive or special authorities	Exclusive authority to export wheat.	Exclusive authority to export Western wheat and barley.	Exclusive authority to export dairy products.	Exclusive authority to export Queensland raw sugar.
STE control of imports	No STE control, but imports are subject to quarantine and transportation regulations.	No STE control, but imports are subject to varietal licensing and some phytosanitary barriers.	None	None, but the Australian Government imposed a tariff on imported sugar until July 1997 that priced raw sugar higher for the domestic market than for export.
Imports as a share of domestic consumption	0.7 percent	Wheat: 1.5 percent Barley: 0.1 percent	Butter: 0 percent Cheese: 0.45 percent Nonfat dry milk: 0 percent	0.2 percent

See notes at end of table.

Continued—

Table 6—Major export-oriented state trading enterprises are types III or IV—Continued

STE characteristics	Australian Wheat Board	Canadian Wheat Board	New Zealand Dairy Board	Queensland Sugar Corporation
III. Domestic market attributes				
STE share of domestic market	No exclusive authority, but holds an estimated 50-percent share of the domestic market.	Markets Western wheat and barley for human consumption. --Human consumption/ (total food+feed use): Wheat: 67 percent Barley: 52 percent	None	Exclusive authority to market raw sugar in Queensland, but not in other Australian States. Queensland produces 95 percent of Australian raw sugar.
Procurement of production	Domestic production for export and for some of the domestic market.	Procures domestic production for export and for human consumption in the domestic market.	Procures manufactured products from domestic cooperatives for export.	Procures cane from Queensland growers for processing and export.
IV. Ownership/financing	Ended government underwriting of pool payments and status as a government corporation July 1, 1999.	As of January 1, 1999, the CWB is composed of 2/3 producers and 1/3 government-appointed directors. The Canadian Government will continue to underwrite CWB operational losses.	Producer-owned and financed.	Producer-owned and financed.
V. Type	Type III	Type IV	Type III	Type III

Notes: The Australian Wheat Board (AWB) and Queensland Sugar Corporation (QSC) shares of their countries' trade are for 1993-95 and come from Australia's WTO notification. The Canadian Wheat Board (CWB) and New Zealand Dairy Board (NZDB) shares of their countries' trade are for 1992-94 based on their countries' WTO notifications. Exports as a share of world trade for wheat and barley are averages for the 1993/94-1997/98 marketing years and do not include intra-EU trade. Export shares of production and import shares of domestic consumption plus feed are averages for the 1993-97 local marketing years.
Sources: STE shares of trade come from WTO notifications for 1995 and 1996. Other trade statistics are calculated from USDA/FAS, various commodity circulars and USDA/ERS, TS View.

Table 7—Reforms have reduced potential trade effects from import-oriented state trading enterprises

STE characteristics	Badan Urusan Logistik (BULOG)—Indonesia	Compania Nacional de Subsistencias Populares (CONASUPO)—Mexico	The Food Agency–Japan	Livestock Products Marketing Organization—Republic of South Korea
I. Commodities	Garlic, rice, soybeans, sugar, wheat, wheat flour	Milk powder	Barley, rice, wheat	Beef
II. Trade attributes				
STE share of country's imports	100 percent of above commodities until September 1998.	100 percent until 1998 when licenses were issued to a multinational firm. CONASUPO was closed March 31, 1999.	Rice: –100 percent (1993-95) –80 percent (1998-99) Wheat: 100 percent Barley: 100 percent	From 1993-95, an average of 80 percent of the TRQ; in 1998, 40 percent of the beef import TRQ. The remainder of the TRQ goes to the private industry Super Groups.
Imports as a share of domestic consumption plus feed	Rice: 3 percent Wheat/flour: 100 percent	Nonfat dry milk: 74 percent (1993-97)	Rice: 4 percent Wheat: 98 percent Barley: 48 percent	Beef and veal: 41 percent (1994-98)
Country's share of world trade	Rice: 12 percent Soybeans: 2 percent Sugar: 2 percent Wheat: 4 percent	Nonfat dry milk: 31 percent (1993-97)	Rice: 4 percent Wheat: 6 percent Barley: 9 percent	Beef and veal: 3 percent (1994-98)
Means of control	BULOG's exclusive import authorities were terminated in 1998. However, BULOG has continued to sell from its earlier accumulated stocks and imports rice as needed to stabilize rice prices.	CONASUPO received all licenses for imports of milk powder under Mexico's WTO and NAFTA TRQ's until 1998 when the Mexican Government issued a large number of licenses for milk powder imports to a multinational firm.	Food Agency has exclusive authority to import under Japan's minimum access quota for rice and TRQ's for barley and wheat. The Food Agency allows the private sector to import small quantities of rice and of feed wheat and barley under SBS tenders.	See above
Export authority	Exclusive authority until September 1998.	None	None	None

See notes at end of table.

Continued—

Table 7—Reforms have reduced potential trade effects from import-oriented state trading enterprises—Continued

STE characteristics	Badan Urusan Logistik (BULOG)—Indonesia	Compania Nacional de Subsistencias Populares (CONASUPO)—Mexico	The Food Agency—Japan	Livestock Products Marketing Organization—Republic of South Korea
III. Domestic market attributes				
STE share of domestic market	Until September 1998, controlled the distribution of imported commodities to processors and retailers through restrictive licensing. Procured rice for national stocks. Maintained administered price systems for wheat flour and sugar.	None, resold imported milk to private firms.	Resells imported rice, wheat, and barley; 100 percent control of domestically produced wheat and barley.	None
Procurement of production	See above	None	Procures domestic production of barley and wheat.	None
IV. Type	Type III-IV until September 1998	Type III until 1998	Type III for rice Type IV for barley and wheat	Type III until 1998
V. Major reforms	See above	The Mexican Government closed CONASUPO March 31, 1999, and started auctioning import permits to private firms in July 1999.	For 1999/2000, the Food Agency will allow private firms to import some feed wheat and barley under a Simultaneous Buy-Sell system.	See above

Notes: Some information comes from WTO Article XVII notifications for Japan, Indonesia, and South Korea for 1995 and 1996. Information about Mexico's CONASUPO comes from FAS, Mexico City, and other publications. Imports as a share of world imports for wheat and barley are averages for the 1994/95-1997/98 marketing years and do not include intra-EU trade. For rice and beef/veal, average imports as a share of world imports are for 1994-98. For nonfat dry milk, average imports as a share of world imports are for 1993-97. Import shares of domestic consumption plus feed are averages for the 1993-97 local marketing years.
Sources: Food Agency, BULOG, and LPMO shares of trade come from WTO notifications for 1995 and 1996. CONASUPO's shares of trade come from USDA. Other trade statistics are calculated from USDA/ERS, “Production, Supply, and Demand” database for barley, beef and veal, nonfat dry milk, rice, soybeans, and wheat.

share of domestic consumption, the policies that help the STE maintain or reinforce its authorities, government financial support for the STE, and the structure of the STE (government or private).

Export-Oriented STEs

The Australian Wheat Board (AWB) can be classified as a Type III STE because it has exclusive authority over exports, but not over imports or the domestic market. The Australian Parliament established the AWB as the sole marketer of Australian wheat domestically and for export in 1939. The AWB will undergo a National Competition Policy review of its single-desk export authority in 2000 (next year). The Australian Government publicly supports the AWB's single-desk authority until 2004, subject to a favorable National Competition Policy review. The AWB plays a pivotal role in Australia's wheat marketing since wheat exports accounted for 79 percent of Australian wheat production in the 1994-97 marketing years. Australia also held a 13-percent share of world wheat exports for the 1993/94 through 1997/98 international wheat marketing (July/June) years, ranking Australia behind the United States, Canada, and the EU. The AWB does not control imports, which accounted for less than 1 percent of domestic supplies from 1993 through 1997 but are subject to strict quarantine and transportation procedures.

The AWB lost its exclusive authority over the domestic wheat market in 1989 and now must compete with other marketers to sell wheat in Australia. The AWB holds an estimated 50 percent of the Australian wheat market. In 1989, the AWB also gained the right to market other Australian grains and grains of other origins (countries).

The AWB was an Australian Government corporation until July 1, 1999, when Australian wheat producers took over ownership of the new AWB Limited. The Australian Government also eliminated its guarantees of the AWB's initial pool payments to its growers at the same time. The new corporation, AWB Limited, will issue one set of shares valued at about A$600 million to its member-growers and a second set of shares to other investors.

The Canadian Wheat Board (CWB) is sole among the four export STEs to be classed as Type IV because it exclusively procures and markets domestically produced Western wheat and barley in Canada for human consumption and exports all Western Canadian wheat and barley. Exports are far more important to Canadian wheat than barley. Exports account for 75 percent of Canada's wheat production, but only 22 percent of barley production. Canada's share of world trade, which averages 19 percent for wheat and 18 percent for barley for the 1993/94-1997/98 marketing years, ranks Canada behind only the United States in world wheat trade and behind the EU and Australia in world barley trade. The CWB's marketing of Western wheat and barley for human consumption accounted for an average of 67 and 52 percent, respectively, of total domestic consumption (consumption plus feed use) from 1994 through 1997.

The CWB does not control imports of wheat or barley, but Canadian Government regulations on wheat and barley varieties, phytosanitary standards, and transportation regulations tend to restrict imports, which accounted for less than 1 percent of domestic supplies for the 1993/94-1997/98 marketing years. In a Memorandum of Understanding of December 1998, Canada and the United States agreed to work together to facilitate access for U.S. wheat into Canada.

The Canadian Government continues to support the majority of its grain producers' demands to maintain the statutory export and domestic market authorities of the CWB. The CWB relinquished its status as an agent of the Crown late in 1998 after electing 10 producers as new board members in addition to 5 government-appointed board members. However, the Canadian Government has continued to underwrite CWB operations (estimated at $6 billion Canadian in 1998), including the CWB's initial pool payments to growers.

The New Zealand Dairy Board (NZDB) fits the description of a Type III STE because it has statutory authority to act as sole exporter of New Zealand dairy products, but does not control domestic marketing or imports. Exports accounted for 88 percent, 82 percent, and 93 percent of New Zealand butter, cheese, and nonfat dry milk production, respectively, from 1994 through 1998. New Zealand commanded 38 percent of world butter exports, 20 percent of world cheese exports, and 19 percent of world nonfat dry milk exports for the same period. In addition to basic dairy commodities, the NZDB is world renowned as an exporter of branded and higher value dairy products. Overall, New Zealand is the second largest world dairy product exporter, accounting for over 30 percent of world dairy product exports. The NZDB has no control over imports, which account for less than 1

percent of New Zealand cheese consumption. New Zealand does not import butter or milk powder.

The NZDB is owned and financed by its member dairy cooperatives. The New Zealand Government announced in its budget submission of May 1998 that its agricultural marketing boards, including the NZDB, would be required by mid-November 1998 to develop and submit for approval marketing strategies to replace the exclusive export authorities of their industries' export marketing boards. In mid-June 1999, the New Zealand dairy industry applied to the New Zealand Commerce Commission to merge the NZDB and nine New Zealand dairy companies. If approved by the Commission, the proposal would create a huge cooperative to market New Zealand dairy products at home and overseas. In a preliminary decision of August 27, 1999, the Commerce Commission rejected the dairy industry proposal. The Commission accepted written submissions on the proposal until September 17 and will hold a public conference on the issue in early October 1999. The formation of the new dairy company also will require the financial agreement of the dairy companies to be merged, the approval of New Zealand dairy farmers, and the New Zealand Parliament's implementing legislation. If approved, the new firm could be the largest corporation in New Zealand.

The Queensland Sugar Corporation (QSC), a state-level marketing board, is classed as a Type III STE because the Queensland government has given the QSC a statutory monopoly over Queensland raw sugar exports. The QSC exported all Australian raw sugar until 1996, when New South Wales and Western Australia began to export very small quantities of raw sugar. The QSC also has exclusive authority to market Queensland raw sugar to Queensland refiners. However, it has no exclusive control over raw sugar marketing in other Australian States. Producers from New South Wales also sell raw sugar to domestic refiners, although Queensland continues to produce 95 percent of Australia's raw sugar.

The Australian Government lifted its embargo on sugar imports in June 1989. Imports climbed to 13,716 tons in 1992, fell sharply between 1993 and 1995, and stabilized at 2,000 to 3,000 tons from 1995 through 1999. After lifting the embargo in 1989, the Australian Government imposed a tariff on imported sugar. Australia maintained the tariff on raw sugar imports until July 1997. The tariff permitted the QSC to maintain two price pools—one for sales to the domestic market and a second for export sales. The removal of the tariff has allowed Australian sugar refiners to access raw sugar at export parity (world) prices. Queensland sugar growers own and finance the QSC.

Import-Oriented STEs

Japan's Food Agency would be classed as a Type III STE for rice because it controls rice imports, but not the marketing of domestically produced rice. For barley and wheat, the Food Agency would be classed as a Type IV STE because it controls imports and the marketing of domestically produced barley and wheat.

Until 1995, Japan granted the Food Agency exclusive authority to import and export rice. The Food Agency imported rice only if domestic production failed to satisfy consumption needs. In the Uruguay Round (UR), Japan agreed to provide minimum access for rice equal to 4 percent of the average consumption in the UR base period, 1986 through 1988. This would rise in annual increments of 0.8 percent of the base period consumption until it reached 8 percent in the final year, 2000, when Japan agreed to import 758,000 tons of rice.[16]

Food Agency rice imports are subject to a markup of 292 yen per kilogram. However, most rice imported by the Food Agency is used for feed, by industries, or for food aid. The Japanese Government also initiated a Simultaneous Buy-Sell (SBS) system for rice imports in 1995. In the Japanese rice SBS, buyers and sellers propose a quantity of rice to be transacted, a cif import price (basically, the seller's price), and a price for purchase by the buyer. The Food Agency then examines all the bids and chooses those that have the widest margin between the selling and the buying price. The Food Agency keeps this margin, which can

[16]Japan established an over-quota tariff for rice on April 1, 1999, in accordance with Annex 5 of the Uruguay Round Agreement on Agriculture, which allows a developed country (Japan) to 'tarrify' its barriers at the beginning of any year. According to Annex 5, Japan must continue to meet its existing minimum access amount (in this case, 606,000 tons in 1998), but annual increases in 1999 and 2000 are allowed at 0.4 percent of base period consumption, rather than 0.8 percent. This means that imports in 1999 will be 644,000 tons (instead of 682,000) and in 2000, they will be 682,000 tons (instead of 758,000). Until another agreement is made, Japan's annual minimum access after 2000 will remain at 682,000 tons (Dyck, Childs, Ackerman, Skully, and Hanson, *Agricultural Outlook*, April 1999, pages 13-16).

also be considered the markup. Japan's use of the SBS for rice has risen from 3 percent of rice imports in 1995 to almost 20 percent in 1998.

The Food Agency also imports most of the wheat and barley under Japan's tariff-rate quotas (TRQ's) for those commodities. Japan does not apply an in-quota tariff to imports of wheat or barley, but the Food Agency applies a markup of up to 53 yen per kilogram to wheat imports, which will be reduced by 1.3 yen per kilo annually through 2000, and up to 34 yen per kilogram for imports of barley, to be reduced by 0.9 yen per kilo annually through 2000. Private firms are free to import barley and wheat at extremely high tariff levels above the quotas. Import data show few imports outside the quotas.[17]

Imports are important to Japan's wheat consumption, but less important to barley and rice consumption. Wheat imports averaged 98 percent of Japan's wheat consumption, 48 percent of Japan's barley consumption, and only 4 percent of Japan's rice consumption from 1994 through 1997. Japan held an 8-percent share of world barley imports from 1993 through 1997, but only 5 percent of world rice and wheat imports for the same period.

The Food Agency does not control the domestic marketing of rice. The Ministry of Agriculture and Foreign Affairs announces annual procurement prices for farmers' rice, but rice is marketed to consumers through thousands of retail stores. The Food Agency does control the pricing and marketing of domestic wheat and barley. In May 1998, the Food Agency announced several changes to its wheat and barley policies to be implemented in the 2000 to 2002 crop years. The Food Agency will allow private firms to purchase domestically produced wheat, and introduced an SBS for imported wheat and barley for feed use.

Until September 1998, *Indonesia's Badan Urusan Logistik (BULOG)* would have been classed as between a Type III and a Type IV STE. The Indonesian Government granted exclusive authority to BULOG in the 1960's to import rice, wheat, wheat flour, soybeans, and sugar and to export rice. BULOG licensed private firms to act as its agents and, in 1998, conducted public tenders for wheat imports. Indonesia applied very low tariffs to imports of agricultural commodities, but was able to control imports through BULOG's exclusive control. Indonesia agreed in the Uruguay Round to establish a TRQ for rice of 70,000 metric tons with an over-quota tariff bound at 160 percent in 2004. From 1994 through 1997, Indonesia's shares of global rice, soybean, sugar, and wheat imports averaged 12, 2, 2, and 4 percent, respectively.

BULOG did not have a monopoly in the domestic rice market, but stabilized domestic rice prices by procuring some domestically produced rice (less than 10 percent) for government stocks and selling them in the domestic market or for export. BULOG also owned grain storage facilities and controlled the milling or processing and retail of other commodities through the licensing of approved firms. BULOG's management of the processing and sales of imported commodities went hand-in-hand with government price controls on wheat, wheat flour, sugar, soybeans, and garlic.

In September 1998, however, the Government of Indonesia terminated BULOG's exclusive authorities over imports and exports and ended price subsidies for wheat, wheat flour, sugar, soybeans, and garlic. BULOG continued to import rice in September 1998, but, instead of choosing its own suppliers, conducted its first public tender for imports. Despite the termination of its exclusive trading authorities, BULOG continues to manage the stocks it accumulated prior to September 1998, and continues to import rice as needed to stabilize prices. The private sector has begun to import sugar, wheat, and other commodities previously controlled by BULOG. It is not clear what BULOG's role will be in the future.

Prior to 1998, *CONASUPO* would be considered a Type III STE for milk powder since it was Mexico's designated importer of milk powder. CONASUPO used the markups it obtained from selling the imported milk powder to private firms to finance the Government's other operations, including the processing and distribution of milk powder to low-income populations. After the Mexican Government established TRQs under the North American Free Trade Agreement and Uruguay Round Agreement on Agriculture, it continued to award almost all import licenses for milk powder to CONASUPO. Mexico's

[17]The Food Agency announced on June 7, 1999, that it would introduce an SBS tender system for wheat for feed and barley for feed in the April 1999/March 2000 Japan fiscal year. The 1999/2000 SBS import tenders will cover 80,000 tons of wheat and 360,000 tons of barley.

imports of milk powder averaged 31 percent of world trade from 1994 through 1997.

In 1998, CONASUPO's monopoly ended when the Mexican Government issued import licenses equal to about 20 percent of Mexico's milk powder imports to a multinational firm for its dairy product processing plant in the State of Chiapas. CONASUPO was the largest single milk powder importer in the world until March 31, 1999, when the Mexican Government closed its doors. In July 1999, the Mexican Government began conducting auctions of import licenses to private sector importers. CONASUPO's sister agency, LICONSA, will import milk powder for the Government's social programs.

The Republic of South Korea's Livestock Products Marketing Organization (LPMO) had not had monopoly control of Korea's beef imports since the early 1990's. The LPMO became Korea's exclusive beef importer and enforcer of its import restrictions in 1988. In the following years, the Korean Government agreed to reduce its protection for beef producers by increasing beef imports and allowing the private sector to import increasing quantities of beef through special industry groups (Super Groups). The LPMO share of Korea's beef import quota averaged about 80 percent from 1993 through 1995, but was reduced to 40 percent in 1998. The LPMO will be phased out as an importer in 2001. However, the LPMO was the largest Korean beef importer in 1998 when the private sector allocation of the import quota was not filled.

Some critics of the LPMO argue that the organization continues to control all imports of beef, despite TRQ allocations to specific industry groups through the SBS import system.[18] If true, this would imply that the LPMO would be classed as a Type III importer. Otherwise, the LPMO would be classed as a Type I STE. Korea is an important beef importer, accounting for 3 percent of world imports of beef and veal on average from 1994 through 1998.

Characterizing China's State Trading of Grains

Since 1978, China has dismantled many of the large foreign trade enterprises that were directed by the national government. Despite massive reforms throughout its economy, however, China maintained its state control of basic agricultural products, particularly grains. Prior to rural reform in 1978, China's specific agricultural policy goals were to "produce ample and cheap food for urban residents and to export farm products as planned to earn hard currency for imports of advanced technology and equipment to develop industries in urban areas" (Tuan and Ke, 1998). Over time, China's national government shifted its policy objectives to long-term food security and self-sufficiency in agriculture. Recently, China's national government shifted its food policy objectives to domestic price stability.

China's state control of grain markets qualifies China as a Type IV state trader in those commodities, but no one government agency controls all aspects of domestic marketing and trade.[19] In the domestic market, the Chinese Government controls domestic production, procurement, storage, transportation, milling, and sales of grain to urban residents and the military. Central and Provincial governments set purchase prices for wheat, rice, and corn procurement quotas.

Each year, government-owned and managed grain bureaus, which are located within each administrative unit (province, prefecture, or county) organize grain supply and use tables to determine grain availability and needs for each administrative unit. These tables signal whether grain is in surplus, balance, or deficit. For administrative units with surplus, the grain bureau fixes the amount of grain to be purchased from farmers at the fixed quota price (about 10 percent of total grain production). The Grain Bureau also purchases an additional 10 percent of each unit's production at above-quota prices for storage and planned distribution. Grain is transferred from surplus to deficit areas, first from surplus counties within a Province (if applicable) and then from other Provinces.

[18]The United States filed a complaint with the WTO against Korea's beef import regime on February 1, 1999. The complaint alleges that Korea discriminates against imported beef by confining imported beef sales to specialized stores and by limiting the display of imported beef. The United States also alleges that Korea imposes a markup on sales of imported beef, limits import authority to certain Super Groups (industry organizations) and the LPMO, and provides domestic support to the cattle industry in amounts that cause Korea to exceed its aggregate measure of support as reflected in Korea's WTO schedule (WT/DS161/1). Australia also will ask the WTO to establish a dispute settlement panel to examine its complaint over import restrictions on beef exports to South Korea.

[19]The description of China's state control over grain marketing is summarized from F.W. Crook, S. Langley, F.C. Tuan, and H. Colby, "State Trading and Management of Grain Marketing in China," *Agricultural Outlook*, U.S. Dept. Agr., Econ. Res. Serv., June-July 1999, pp. 27-30.

The national government determines import needs and export opportunities. To plan imports and exports of grains, the State Planning and Development Commission (SPDC) consults with the State Council; the Ministry of Foreign Trade and Economic Development (MOFTEC); the Ministries of Agriculture, Internal Trade (Commerce); Foreign Trade; and the Administration for Grain Reserves (SAGR), an arm of the State Planning and Development Commission. The SPDC passes the import and export plans to MOFTEC, which delegates the trading process to China's National Cereals, Oil and Foodstuffs Import and Export Corporation (COFCO).

MOFTEC orders COFCO to import specified quantities of grain and transfer the imported grain to the grain bureaus at government-fixed import prices. MOFTEC also orders COFCO to export specified quantities of grain from specific provinces.[20] Both import and export transfer prices are based on the domestic government's procurement prices.

[20]Prior to 1989, COFCO had exclusive authority to export and import grains for the central government and exercised autonomy in the logistics and pricing of traded commodities. COFCO also maintained branches throughout China to carry out its marketing activities. After 1992, some of the Provincial governments began to direct their Provincial branches of COFCO to import grains. As provincial COFCOs began to compete with the central COFCO, tensions arose. In 1998, China's central government sought increased control of its grain production and marketing operations and has allowed only the central COFCO to trade.

COFCO exports corn and rice and imports wheat and rice.[21] China is a large but erratic trader in world markets, controlling an average of 6 and 21 percent, respectively, of world rice and corn exports from 1994 through 1998. China also accounts for an average of 6, 10, and 4 percent, respectively, of world wheat, barley, and rice imports.

China's state control of domestic marketing and trade is strongest for grains. COFCO once was the sole agent for imports of soybeans and soybean products. In 1997, however, China's leaders broke up COFCO's monopoly and allowed four other companies to import soybean oil within the import quotas announced by the national government. China's national government does not control the domestic soybean market, although individual Provincial governments have restricted the movement of soybeans from one Province to another. Thus, China's state control of soybeans and soybean products would be classed more as a Type III than as a Type IV STE.

COFCO's role as import and export agent for the Chinese Government's grain and oilseed imports represents only a small part of its commercial activities. COFCO, a diversified conglomerate, also has investments in hotels, food processing, and other industries.

[21]In March 1999, China's central government allowed the Jilin Province to set up its own export company to export corn from Jilin and possibly other Provinces. The Chinese Government will cap exports even once the company is established since China's high domestic corn prices require the Government to subsidize exports.

VI. Future Research Directions

This report is only a primer on the subject of state trading in agriculture. Clearly, several activities need further investigating. For one, considerable ambiguity still exists on the definition of a state trading enterprise. The 1994 Uruguay Round Agreement (Understanding on Article XVII) does not clearly define "governmental enterprise" nor elaborate on the interpretation of "exclusive or special privileges." It is also not clear whether these parastatal enterprises must make purchases or sales to qualify as an STE. Clarifying the ambiguities in the WTO definition of STEs would improve international reporting.

Moreover, this report provides information on a limited set of STEs that operate in agricultural markets. We would better understand how STEs influence markets if more information were available. Hence, a comprehensive inventory of STEs, including those which have not been reported to the WTO, needs to be built.

Our study points out that attempts to assess empirically the quantitative impacts of such entities on international agricultural trade have just begun. Progress has been slow because of the proprietary nature of the information required. Moreover, given that STEs are typically just one element of a web of agricultural policies designed to achieve a multitude of objectives, data limitations may make it difficult to isolate the trade impacts exclusive to the state trader if other distortionary forces are in existence. However, tariff and subsidy equivalents for STEs that are important to agricultural trade should be calculated.

Finally, STEs should be classified in terms of their ability to distort trade. Modifications to the existing classification scheme should be considered if empirical evidence supports the need for changes. Combining these activities with the knowledge of the institutional facets of individual STEs will best allow us to understand the economics of state trading.

References

Ackerman, K.Z. "State Trading Enterprises: Their Role as Importers,"*Agricultural Outlook*. U.S. Dept. Agr., Econ. Res. Serv., Nov. 1997, pp. 31-37.

Ackerman, K.Z., P. Dixit, and M. Simone. "State Trading Enterprises: Their Role in World Markets," *Agricultural Outlook*. U.S. Dept. Agr., Econ. Res. Serv., June 1997, pp. 11-16.

Alaouze, C., A. Watson, and N. Sturgess. "Oligopoly Pricing in the World Wheat Market," *American Journal of Agricultural Economics* 60: 173-85, 1978.

Baldwin, R.E. *Non-tariff Distortions of International Trade*. Brookings Institute, Washington, DC, 1970.

Barichello, R. "The Nature of State Trading in Indonesia: The Case of BULOG." Presentation to the International Agricultural Trade Research Consortium, Dec. 1996.

Bernier, I. "State Trading and the GATT," in Kostecki, M.M., editor, *State Trading in International Markets*. St. Martins Press, New York, 1982.

Carter, C.A., and R.M.A. Loyns. *The Economics of Single Desk Selling of Western Canadian Grain*. Alberta Agriculture, Canada, March 1996.

Carter, C.A., R.M.A. Loyns, and D. Berwald. "Domestic Costs of Statutory Marketing Authorities: the Case of the Canadian Wheat Board," *American Journal of Agricultural Economics* 80: May 1998, pp. 313-324.

Carter, C.A., and A. Schmitz. "Import Tariffs and Price Formation in the World Wheat Market," *American Journal of Agricultural Economics* 17: 241-53, 1979.

Choi, J.S., D.A. Sumner, and J. Song. "Importing STEs in Korea and Japan: Evolution, Operation and Implications," presented on November 20, 1998, at the Workshop on State Trading in North America, sponsored by the North America Forum at Stanford University and the Agricultural Issues Center at the University of California.

Crook, F.W., S. Langley, F.C. Tuan, and H. Colby. "State Trading and Management of Grain Marketing in China," *Agricultural Outlook*. U.S. Dept. Agr., Econ. Res. Serv., June-July 1999, pp. 27-30.

Davey, W.J. "Article XVII GATT: An Overview," in *State Trading in the Twenty-First Century*, eds. T. Cottier and P.C. Mavroidis, University of Michigan Press, 1998, pp. 27-28.

Dixit, P.M., and T. Josling. *State Trading in Agriculture: An Analytical Framework*, International Agricultural Trade Research Consortium Working Paper No. 97-4, July 1997.

Dyck, J., N. Childs, K. Ackerman, D. Skully, and S. Hanson, "Rice Tariffication in Japan: What Does It Mean For Trade?" *Agricultural Outlook.* U.S. Dept. Agr., Econ. Res. Serv., April 1999, pp. 13-16.

Gehlar, M., and C. Arnade. "Pricing Behavior in the International Wheat Market: An Empirical Investigation of Importers," forthcoming in the *Canadian Journal of Agricultural Economics*.

Ghai, D.P. *State Trading and Regional Economic Integration Among Developing Countries*, United Nations, New York, 1973.

Goodale, R. "Amendments to the Canadian Wheat Board: Goodale Responds to Questions about Bill C-4," Agriculture and Agrifood Canada news release of January 26, 1998.

G/STR/N/1/USA. "State Trading: Notification Pursuant to Article XVII: 4(a) of the GATT 1994 and Paragraph 1 of the Understanding of the Interpretation of Article XVII: the United States," September 29, 1995, pp. 2-5.

"Havana Charter for an International Trade Organization: Including a Guide to the Study of the Charter," Department of State Publication 3206, Commercial Policy Series 114, September 1948.

Hazard, J.N. "State Trading in History and Theory," *Law and Contemporary Problems*, #24, 1959.

Helpman, E., and P.R. Krugman. *Trade Policy and Market Structure*. M.I.T. Press. Cambridge, MA, 1994, p. 28.

Horlick, G.N., and K.H. Mowry. "The Treatment of Activities of State Trading Enterprises under the WTO Subsidies Rules," in *State Trading in the Twenty-First Century*, eds. T. Cottier and P.C. Mavroidis, University of Michigan Press, 1998, p. 101.

Houck, J.P. "Chapter 11: Market and Price Discrimination," *Elements of Agricultural Trade Policies*, 1986, Waveland Press, pp. 112-119.

Josling, T. "Managed Trade in Agricultural Markets," Tim Wallace and Bill Schroder, eds., *Perspectives on Food Industry and Government Linkages*, 1997.

Josling, T. *Agricultural Trade Policy: Completing the Reform*. Institute for International Economics, Policy Analyses in International Economics #53, April 1998, pp. 86-88.

Kostecki, M.M. "State Trading in Agricultural Products by the Advanced and Developing Countries: the Background," Kostecki, M.M., ed., *State Trading in International Markets*, St. Martins Press, New York, 1982.

Kraft, D.F., W.H. Furtan, and E.W. Tyrchniewicz. "Performance Evaluation of the Canadian Wheat Board," Working Paper, University of Manitoba, Canada, January 1996.

LaFrance, J.A., A. Schmitz, and D. Silberman. "Small Leading Firms," *Economic Record*, 60 (1984): 160-64.

Lloyd, P.J. "State Trading and the Theory of International Trade," Kostecki, M.M., ed., *State Trading in International Markets*, St. Martins Press, New York, 1982.

Martin, W., and C. Bach. "State Trading in China," in *State Trading in the Twenty-First Century*, eds. T. Cottier and P.C. Mavroidis, University of Michigan Press, 1998, pages 287- 301.

McCalla, A.F., and A. Schmitz. "State Trading in Grain," Kostecki, M.M., ed., *State Trading in International Markets*, St. Martins Press, New York, 1982.

Miner, W.M. "State Trading and the WTO: Reforming the Rules for Agriculture," presented in Palo Alto on November 21, 1998, at the Workshop on State Trading in North America, sponsored by the North America Forum at Stanford University and the Agricultural Issues Center at the University of California.

New Zealand Apple and Pear Marketing Board. "Guidelines for Consent to Export Apples and Pears," May 31, 1994.

Office of the United States Trade Representative. "Market Access and Protocol Commitments," http://www.ustr.gov/release/1999/04/ch-memo.pdf, April 1999.

Organization for Economic Cooperation and Development (OECD). *National Policies and Agricultural Trade*. Paris, France, 1987.

Roningen, V.O., and P.M. Dixit. *Measuring Agricultural Trade Distortion: A Simple Approach*. ERS Staff Report AGES 9145, U.S. Dept. Agr., Econ. Res. Serv., Dec. 1991.

Schmitz, A., H. Furtan, H. Brooks, and R. Gray. "The Canadian Wheat Board: How Well Has It Performed?" in *Choices* magazine, First Quarter 1997, pp. 36-42.

Skully, D.W. "Price Discrimination and State Trading: the Case of U.S. Wheat," *European Review of Agricultural Economics*, 19 (1992), p. 319.

Sorenson, V.L. "The Economics and Institutional Dimension of State Trading," in Sorenson, Vernon L., and others, editors, *State Trading in International Agricultural Markets: Institutional Dimension and Select Cases*. International Policy Council on Agriculture and Trade, Washington, DC, Dec. 1991.

Sumner, D., and T. Josling. "The Role of the State in Agricultural Trade in North America: The U.S. Commodity Credit Corporation as a Government Actor in the North American Market for Grains," presented on November 20, 1998, at the Workshop on State Trading in North America, sponsored by the North America Forum at Stanford University and the Agricultural Issues Center at the University of California.

Tuan, F.C., and B. Ke. "A Review of China's Agricultural Policy: Past and Present Developments," unpublished ERS paper for presentation at a workshop of the OECD Directorate for Food, Agriculture and Fisheries, Nov. 19-20, 1998.

U.S. Department of Agriculture, Economic Research Service. *Government Intervention in Agriculture: Measurement, Evaluation, and Implications for Trade Negotiations*. FAER-229, 1987.

U.S. Department of Agriculture, Foreign Agricultural Service. Various Annual Commodity Reports for Australia, Canada, Indonesia, Japan, Mexico, New Zealand, South Korea, and other countries, as well as communications with the attaches.

United States General Accounting Office (GAO). "State Trading Enterprises: Compliance with the General Agreement on Tariffs and Trade," GAO/GGD-95-208, Washington, DC, Aug. 1995.

Veeman, M., M. Fulton, and B. Larue. *International Trade in Agricultural and Food Products: The Role of State Trading Enterprises*. Economic and Policy Analysis Directorate, Agriculture and AgriFood Canada. April 1999.

World Bank. *Bureaucrats in Business: The Economics and Politics of Government Ownership*. 1995, Oxford University Press.

World Trade Organization (WTO). *Trade Policy Review: Republic of Korea*. Geneva, Switzerland, 1996.

World Trade Organization. *Guide to GATT Law and Practice: Volume I*. Geneva, Switzerland. 1995a, pp. 322-324.

World Trade Organization. *Operations of State Trading Enterprises as They Relate to International Trade: Background Paper by the Secretariat*. G/STR/2. Oct. 26, 1995b.

World Trade Organization. *The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts*, Geneva, Switzerland, 1994.

Appendix A: STEs in the GATT

In 1947, GATT negotiators recognized that STEs could distort trade flows the same way that government policies regulating commercial trade affect trade. GATT Article XVII acknowledges STEs as legitimate participants in international trade, but requires that STEs not discriminate among importers or exporters and that they adhere to commercial considerations when they make purchases or sales.

GATT rules on import and export restrictions also regulate trade by STEs. An interpretative note to GATT Article XI, which prohibits countries from restricting exports or imports, applies the rule to restrictions made effective through state trading operations. GATT Article II:4 explicitly provides that an import monopoly not operate in such a way that it affords protection on the average in excess of the country's bound tariff rate (Davey, 1998, pp. 27-28). Article II:4 is strengthened by a reference to the Havana Charter, which requires that an import monopoly import and offer for sale "such quantities of the product as will be sufficient to satisfy the full domestic demand for the imported product...." (Havana Charter for an International Trade Organization, September 1948).

The Uruguay Round Agreement on Agriculture (URAA) eliminated many of agriculture's exemptions from GATT rules. Prior to the URAA, countries could impose restrictions on imports and exports of agricultural products to support domestic policy objectives. Agriculture was exempt from GATT rules that made export subsidies illegal. The URAA applied prohibitions on nontariff import restrictions to agricultural state traders. Countries also agreed to consider the effect of export restrictions on importing countries' food security and to notify the WTO of potential export restrictions for agricultural products.

The nature of STEs creates the possibility for the provision of an export subsidy (Horlick and Mowry, 1998, p. 101). If the government or an agency of the government operates or controls the procurement and the sale of the product, it would be ideally placed to support producers by subsidizing exports over domestic sales. The URAA substantively restricted countries' use of export subsidies in agricultural trade, but did not link the export-marketing practices of STEs to those disciplines. Countries notified the GATT of their agricultural subsidies contingent on export performance, including direct cash or in-kind export subsidies, sales or disposal of noncommercial stocks at a price lower than the domestic market price, and subsidies financed by producer levies. Subsidized sales by agricultural STEs were included in some countries' export subsidy notifications.

However, some of the export marketing practices of agricultural STEs are not defined as export subsidies in the Uruguay Round Agricultural Agreement, but could allow countries to circumvent their export subsidy commitments. Without more substantive GATT rules on the marketing practices of STEs, the complainant country currently has little recourse in countering their adverse trade effects.

Appendix B: STEs Reported to the WTO in 1995 and 1996

The following information represents individual countries' notifications of their STEs to the WTO in 1995 and 1996. Countries are required to report their STEs to the WTO's Council for Trade on Goods under Article XVII once every 3 years on the basis of a questionnaire that was adopted in 1960 and revised in 1998. Some countries told the WTO that they had no agricultural STEs, and others did not send in reports.

Some of the STEs reported to the WTO have been dismantled or their responsibilities have been changed since the 1995 reporting period. Countries are expected to report these changes to the WTO.

Australia:	
Australian Dairy Corporation	Exporter of some butter, cheese, milk powder, milk fat
Australian Dried Fruits Board	Promotion board
Australian Honey Bureau	Promotion board; issues export licenses
Australian Horticultural Corporation	Promotion board
Meat and Livestock Australia	Promotion board; issues export licenses
Australian Wheat Board	Exclusive exporter of wheat
Australian Wine and Brandy Corporation	Promotion board; issues export licenses
Australia-Wool International	Promotion board
New South Wales Rice Marketing Board	Exclusive exporter of NSW rice
Queensland Sugar Corporation	Exclusive exporter of Queensland raw sugar
Australian Barley Board	Exclusive exporter of barley grown in South Australia and Victoria
Grain Pool	Exporter of grains
New South Wales Grain Board	Exporter of grains
Barbados:	
Barbados Agricultural Development Corporation	Exclusive importer of poultry parts, onions, and refined and raw sugar
Barbados Dairy Industries, Ltd.	Exclusive importer of dairy products
Canada:	
Canadian Dairy Commission	Exports some butter, evaporated milk, and milk powder; imports butter
Canadian Wheat Board	Exclusive exporter of Western Canadian wheat and barley
Provincial Liquor Control Authorities	Some import and export beer and wine
Chile:	
Comercializadora de Trigo, S.A. (COTRISA)	Purchases small amounts of domestically produced wheat, but does not export or import
Colombia:	
Departmental liquor monopolies	Import wine and liquors
Cyprus:	
Cyprus Potato Marketing Board	Exports potatoes
Cyprus Carrot and Beetroot Marketing Board	Exports carrots and beetroot
Cyprus Milk Industry Organization	Issues production quotas to domestic producers; no trade activities
Olive Products Marketing Board	Exports and imports olive oil
Vine Products Commission	Exports raisins and raw grape alcohol

Czech Republic:	
State Fund for Market Regulation in Agriculture	Exports butter, sugar, barley malt, grains, milk powder pork, potato starch, potatoes, cheese, sugar, and beef
European Union:	
Tobacco monopolies in Austria and Italy	
Iceland:	
State Alcohol and Tobacco Monopoly	Exports and imports beer, wine, and liquor; imports tobacco
India:	
Food Corporation of India	Exports onions, gum karaya, and Niger seeds; depending on the year, imports rice and wheat
Indonesia:	
Badan Urusan Logistik (BULOG)	Exclusive importer of wheat, flour, soybeans, sugar, and garlic (until 1998); exclusive importer and exporter of rice (until 1998)
Israel:	
Groundnuts Production and Marketing Board	Exports groundnuts
Production and Marketing Board of Ornamental Plants	Exports ornamental plants
Fruit Board of Israel	Exports noncitrus fruits
Vegetable Production and Marketing Board	Exports vegetables
Egg and Poultry Board	Exports eggs and poultry products
Jamaica:	
The Cocoa Industry Board	Arranges for exports of cocoa
The Coconut Industry Board	Regulates exports of coconut
The Coffee Industry Board	Exports coffee
Banana Board	Exports bananas
Sugar Industry Board	Issues export licenses
Japan:	
Agriculture and Livestock Industries Corporation	Imports dairy products (butter, butter oil, condensed milk, milk powder, whey) for specific uses; imports raw silk
Japan Tobacco, Incorporated	Monopoly on tobacco production; imports and exports leaf tobacco
The Food Agency	Exclusive importer of wheat (food), barley, rice and their simple worked products (flour, groats, pellets, malt)
Republic of South Korea:	
Agricultural and Fishery Marketing Corporation	Imports beans, buckwheat, garlic, genus capsicum (red pepper), ginger, groundnuts, onions, potatoes, sesame seeds, and soybeans (food use)
Cheju Citrus Growers Cooperative	Imports and exports citrus fruits
Ministry of Agriculture, Forestry and Fisheries	Exclusive importer of malting barley and rice
Livestock Products Marketing Organization	Imports beef

National Ginseng Cooperative Federation	Exports ginseng
National Livestock Cooperatives Organization	Imports honey
Raw Silk Exporters Association	Imports raw silk
Malaysia:	
Padiberas Nasional Berhad (Bernas)	Exclusive importer of rice
Malta:	
Medigrain, Ltd.	Imports wheat, corn, and barley
Mauritius:	
Agricultural Marketing Board	Exclusive importer and distributor of potatoes, onions, garlic, corn, turmeric, and cardamoms
State Trading Corporation	Exclusive importer of certain types of rice
Tobacco Board	Exclusive purchaser of domestically produced leaf tobacco; grants permission to manufacturers to import tobacco
Tea Board	Issues export and import licenses
Morocco:	
National Tea and Sugar Board	Imports sugar and tea
Tobacco Board	Exclusive importer of tobacco and cigarettes
Namibia:	
Namibian Agronomic Board	Issues import and export licenses for corn, wheat, and sunflowerseed
Meat Board of Namibia	Issues export and import licenses for meat and live-stock
Karakul Board	Exports karakul pelts
New Zealand:	
New Zealand Apple and Pear Marketing Board	Exclusive exporter of NZ apples and pears
New Zealand Dairy Board	Exclusive exporter of NZ butter, cheese, milk powder, and other dairy products
New Zealand Game Industry Board	Promotion board
New Zealand Kiwifruit Marketing Board	Exclusive exporter of NZ kiwifruit
New Zealand Meat Producers Board	Issues export licenses; promotion board
New Zealand Wool Board	Issues export licenses; promotion board
Hops Marketing Committee	Exclusive exporter of NZ hops
Raspberry Marketing Council	Exclusive exporter of NZ raspberries
Norway:	
Norwegian Grain Corporation	Imports grains and feedstuffs (oats, flour, wheat)
Philippines:	
The National Food Authority	Sole importer and exporter of rice; authorized to import and export corn
Poland:	
Agricultural Marketing Authority	Depending on the year, imports and/or exports butter, wheat, rye, potato starch, milk powder, and pork

Slovakia:	
State Fund for Market Regulation in Agriculture	Depending on the year, imports butter, sunflowerseed or oil, milk powder, grains, starches, poultry, eggs, beef, potatoes, barley malt, pork, sugar, and cheese
Slovenia:	
Commodity Reserves	Imports raw and refined sugar, and wheat
South Africa (all boards were dismantled in 1997):	
Maize Board	
Meat Board	
Wool Board	
Oilseeds Board	
Unifruco for the Deciduous Fruit Board	
Dried Fruit Board	
Cotton Board	
Lucerne Seed Board	
Outspan International on behalf of the Citrus Board	
Milk Board	
Sorghum Board	
Switzerland:	
Federal Office of Agriculture	Imports bread flour and durum wheat meal
Swiss Butter Supply Board	Imports butter
Thailand:	
Public Warehouse Organization	Allocates tariff-rate quota for seed potatoes and sells domestically produced tea to importers
Thailand Tobacco Monopoly	Exclusive importer of tobacco
Tunisia:	
Grain Board	Exclusive importer of barley, corn, and wheat (common and durum)
National Edible Oils Board	Exclusive importer of seed oil and exporter of olive oil
Tunisian Trade Board	Exclusive importer of coffee and tea
Tunisia National Tobacco and Matches Agency	Exclusive importer of tobacco and cigarettes
Turkey:	
Turkish Soil Product Office	Imports and exports barley and wheat (common and durum)
Turkish State Monopoly	Exclusive importer and exporter of beer, wines, and liquors
United States:	
Commodity Credit Corporation	Exports some butter and milk powder (through 1995)

Appendix C: Complexities in Analyzing State Trading Practices

The tariff/subsidy equivalent approach that has been proposed to analyze the distortionary impacts of STEs is relatively simple. It transforms the entire set of policies and activities associated with state trading into one easily understood summary measure that can be compared over time, and across commodities, policies, and countries. But is the analytical framework completely adequate for addressing the economic concerns associated with state trading?

A primary concern with state trading enterprises is their ability to distort trade by cross-subsidizing across markets. Does the tariff/subsidy equivalent approach capture this potential to distort trade? The answer is yes, if the tariff/subsidy equivalents are measured in two or more markets rather than in a single market. Hence, cross-subsidization between the internal and external markets could be measured as higher protection (tariff equivalents) in the domestic market and greater subsidization (export subsidy equivalents) in foreign markets. The same would be true for cross-subsidization across commodities. Tariff/subsidy equivalents could be measured in different markets.[22]

Price pooling, where the final price paid to producers is a blended price based on the net revenue from all sales in the foreign and domestic markets, is often cited as another STE activity that distorts trade. Is the impact of price pooling reflected in the tariff/subsidy equivalent? We believe that it is because the analytical issue is no different from cross-subsidization across markets or products. Where the analysis becomes more complex is in cases of price pooling across time (between years). In this situation, the tariff equivalent should be calculated over the length of time in which the policy is applicable. Pooling across time may affect stocks and hence trade. But even here, it is difficult to argue that pooling has an unequivocal effect on the volume of trade.

Does the price gap capture the competitive advantage that STEs might secure from governmental association? Tax benefits, transport subsidies, and preferential exchange rates are some of the provisions that are most often cited. If we assume that the objective of the STE is to maximize profits with price as the decision rule, then conceptually these facilities do not pose any problems for the analytical framework. Clearly, if the STE sets prices to maximize its profits taking into account the effects of these provisions, then the price gap will capture provisions that facilitate STE activities. However, if profit maximization is not the goal or if there are cases where the tariff equivalent does not capture the effects of certain special privileges, then it will be necessary to calculate the tariff or subsidy equivalents of the policy and come up with alternative measures such as producer and consumer subsidy equivalents (OECD, 1987). Input subsidies, or policies that are defined as part of WTO internal support disciplines, may fall in this category.

The use of so-called "hidden" or implicit subsidies associated with certain STE activities has played an important role in the debate on STEs. To the extent that these are not reflected in either domestic or trade prices, it could suggest that the tariff/subsidy equivalent does not adequately represent the trade impacts of STEs. For instance, it may be difficult to quantify the benefits for STEs in making long-term agreements with other public enterprises or governments. But such cases are likely to be few and far between, and the concerns relate not necessarily to the appropriateness of the analytical framework but rather to the availability of data about these activities.

The proposed tariff/subsidy equivalent approach measures the effect on prices and quantities traded by comparing the behavior of STEs against competitive standards. Some would argue that this is not an adequate description of agricultural markets and it may be inappropriate to assume that these markets would behave competitively in the absence of state trading. Under these circumstances, they argue, the estimation procedure will overestimate the subsidy equivalent unless the removal of the state trading activity will also change the structure of the market in question to a perfectly competitive one (Veeman, Fulton, and Larue, 1999). This suggests that our approach provides a more accurate representation of the benefits of deregulating state trading activities in cases where market concentration is minimal.

The tariff/subsidy equivalent approach is designed exclusively to capture the overall trade effects of STE

[22]This section draws heavily on Dixit and Josling's *State Trading in Agriculture: An Analytical Framework*, International Agricultural Trade Research Consortium Working Paper No. 97-4, July 1997.

activities. It represents a summary measure of the impacts of a multitude of objectives and activities, and does not allow a one-to-one mapping between objectives/activities and the trade impacts. But, we know that state traders may pursue several activities/objectives. For instance, some STEs have been established to ensure price stability in the domestic economy. Others may have been created to help implement health and sanitary guidelines, facilitate acquisition of rents for the government, or expedite political mandates. The tariff/subsidy equivalent approach cannot isolate the impacts of such specific activities. Hence, alternative approaches would have to be developed to measure the trade impacts of individual objectives or activities.